GOVERNMENT OF
NEWFOUNDLAND
AND LABRADOR

Department of Development and Rural Renewal

Manufacturing Development: A Strategy for Small-Scale Manufacturing in Newfoundland and Labrador

May 1999

Message from the Minister

It gives me great pleasure to provide you with ***Manufacturing Development: A Strategy for Small Scale Manufacturing in Newfoundland and Labrador***. This document outlines a dynamic new approach to Government=s support for the small scale manufacturing sector. It is a strategically important aspect of Government=s overall jobs and growth agenda.

We are focussing on small scale manufacturing as it is a propulsive sector of our economy holds opportunity for all parts of our province, particularly rural areas, and can provide year-round stable employment for our people.

Development of this strategy has been a team effort, with extensive consultations involving provincial and federal government departments, industry, education and training institutions, and community based economic development organizations. The Strategies for Action contained in this document represent a consensus of all key stakeholders as to how we can best support the growth and diversification of small scale manufacturing enterprises in our province.

I look forward to working with our partner agencies, industry and other groups as we move ahead with implementation of this strategy.

Beaton Tulk

Minister for Development and Rural Renewal

EXECUTIVE SUMMARY

Manufacturing has undergone significant change in an era of global competition, new information and production technologies and corporate re-structuring. Increasingly, small scale manufacturers are able to compete in specialized market niches or in the production of inputs required by larger firms. While many large manufacturers have downsized in recent years, they have created opportunities for small scale manufacturers by out-sourcing much of what used to be done within one factory. Firms located in peripheral regions such as Newfoundland and Labrador have opportunities to compete successfully in this environment, if they adopt emerging Abest practices@ in manufacturing. Similarly, governments, industry associations and community development organizations which hope to foster manufacturing development must understand these trends and learn what approaches to sector development offer the greatest chances of success.

The Small Scale Manufacturing Strategy for Newfoundland and Labrador presents lessons on best practices and the approaches necessary to maximize sector development in this province. It has been developed in cooperation with the Alliance of Manufacturers and Exporters Newfoundland (the Alliance), the federal government, the Faculty of Engineering at Memorial University of Newfoundland and the Bishops Falls Development Corporation. It has involved original research on global trends and approaches to sector development in nine jurisdictions in North America and across the North Atlantic Rim and, in cooperation with the North Atlantic Islands Program, has carried out detailed interviews with sixty small scale manufacturers in Newfoundland and Labrador, Prince Edward Island, Iceland and the Isle of Man.

The findings from this research reveal that in an era of global competition small scale manufacturers must focus on what they do best - their Acore competencies@ - and learn to market their production effectively to maximize sales. They must seek out information on new production and marketing techniques by Abenchmarking@ themselves against other firms. They must adopt a commitment to quality processes which monitor and meet customer needs in all aspects of production and sales. As they focus on their area of core competence, they must practice flexible manufacturing, so that every opportunity to apply their competitive advantage is exploited. With increased opportunities through out-sourcing by other firms, small scale manufacturers must learn to work with other firms in business networks and learn how to manage their place in the supply chain by adopting quality certification procedures, utilizing information technology and mastering transportation logistics

so they can deliver Ajust-in-time.@ Firms which adopt these practices export more, grow faster and sell more than small scale manufacturers which remain Ageneralists@ by producing a range of products without focusing on what they do best.

For governments, industry associations and community development organizations seeking to foster manufacturing sector development, the comparison with other peripheral regions, provinces, and countries, also reveals Abest practices.@ Applying lessons from one location to another must take into account the significant differences which exist in creating a supportive socio-economic environment. The ability to tailor fiscal, monetary and trade policies to the needs of sector development in a region varies significantly from provinces like Newfoundland and Labrador to countries like Iceland and Ireland. Whatever the nature of the jurisdiction, however, a key lesson for sector development is the ability to take a coordinated and sustained approach to manufacturing development. Those places which marshal available resources for human resource development, infrastructure supports and business development in a coordinated, systematic manner for a sustained period of time greatly increase the chances of success in expanding the sector. This is enhanced by taking a strategic approach which identifies local strengths and external opportunities and targets specific sectors matching the region=s comparative advantages. To implement such strategies, governments must enter partnerships with industry, communities, education and training institutions and other stakeholders. Wherever there are individuals or groups which are Achampions@ for sector development in a region, they must be encouraged and supported. Finally, business supports must be available which address the best practices for small scale manufacturers.

Five key areas of Strategic Action are identified to apply these lessons in Newfoundland and Labrador. The first requirement for sector development is to openly recognize small scale manufacturing as a development priority. Secondly, information and education on the best practices and approaches outlined in the strategy need to be communicated to stakeholders throughout the province. Third, supports will be targeted to implement best practices through government programs, the Alliance, Memorial University of Newfoundland, the College of the North Atlantic and Regional Economic Development Boards (REDBs). Fourth, a strategic approach must be taken to build on strengths and opportunities in working with existing firms and in investment attraction efforts. Finally, a Manufacturers Development Forum needs to be established to coordinate and sustain the implementation of this strategy through a partnership of governments, industry and education and training institutions. Partnerships also need to be fostered with REDBs, organized labour and municipalities, to ensure that a supportive environment is fostered for sector development.

By implementing these Strategic Actions in a sustained and coordinated manner, small scale manufacturers in Newfoundland and Labrador will be able to operate in an environment which enhances their efforts individually and collectively. Governments, industry associations, education and training institutions and community-based organizations should focus their efforts to support the adoption of

best practices. The human resources, technology, business supports and infrastructure required for firms to flourish within the sector need to be identified and supported to make maximum use of available resources. New firm creation and the attraction of firms from outside the province should be based upon an understanding of what our competitive strengths are and where existing gaps can utilize new investment, technology and know-how. The end result will be enhanced diversification of the economy in all areas of the province and the creation of sustainable employment for Newfoundlanders and Labradorians.

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1.0 Introduction

Since the industrial revolution, manufacturing has helped define economic development. Manufacturing is the process of taking resources and through packaging, processing, fabrication and/or assembly transforming the resources to a physical product demanded in the marketplace. In peripheral areas, manufacturing has consisted primarily of processing raw resources into serni-processed goods. These goods are then further processed into products. The additional processing usually takes place in areas close to the marketplace resulting in a clustering of the required technology, capital, services, management and workforce. Over time this centralization of value added production made regions with large urban populations strong in manufacturing development while peripheral areas remained dependent on primary resource production.

Since the 1950s, some opportunities rose for peripheral areas to attract Abranch plant@ production. This did not occur until decentralized production was made possible through the development of standardized manufacturing processes that could be applied to mature products. Branch plants, as a rule, located where expenses were minimal and the regulatory environment was less restrictive. These plants provided some employment but few of the higher value activities associated with manufacturing development and were always vulnerable to closure when more attractive, lower cost sites were available. As such, throughout recent history, efforts to transplant large-scale manufacturing with branch plant attraction efforts seldom succeeded. The absence in peripheral areas of the supportive network of related suppliers, specialized infrastructure and experienced management and labour also made successful transplants the exception rather than the rule.

For jurisdictions such as Newfoundland and Labrador efforts were made to promote large scale manufacturing. The promotion of manufacturing to support regional development is understandable as it is clearly a Apropulsive@ sector for any economy. Manufacturing usually creates well-paid, year-round employment which then increases economic activity through consumer spending. Manufacturing transmits wealth throughout the economy by encouraging up- and downstream production linkages, consisting of opportunities to produce inputs used in the manufacturing process (upstream) and to use the outputs for further manufacturing (downstream). Inputs can be primary resources or goods produced by other firms. Inputs can also be services in transportation, communications, enabling technology, accounting or any number of supports required for production. In addition, outputs of one manufacturer can become inputs for further production by other manufacturers (eg. plastic bottles as inputs for bottled, flavoured iceberg water). There are examples of successful large scale manufacturing in

Newfoundland and Labrador, but there have been significant changes in the nature of manufacturing production which point to new opportunities for smaller manufacturers as well.

The changes that are now providing opportunities for small manufacturers began in the 1970s and were characterized initially by a decline in large scale manufacturing employment in major urban centres as well as growth in the service sector. Some of the decline resulted from technological innovations that allowed productivity to increase while employment levels decreased. Much of the decline, though, occurred when in-house support service activities within manufacturing firms were outsourced to companies with the specific skills needed to satisfy the needs of the manufactures. This outsourcing of the 1970s is no longer limited to the service sector. Now large manufacturers are outsourcing specialized activities to smaller firms who have the special skills and capabilities to deliver products once produced in-house.

As these new opportunities were emerging, many peripheral regions started to look towards other sectors as the basis for development. Globally, in the 1980s, increased attention was focussed on the emergence of a post-industrial Ainformation age@ economy. This Anew economy@ was driven by information technology and knowledge-based workers, not the industrial activity and factory workers traditionally associated with manufacturing. Some, peripheral regions felt they could Aleapfrog@ the industrial age into the Anew economy@ defined by the production of knowledge based products rather than manufactured goods. Development efforts focussed on ways to harness new information and communications technologies to foster growth in business services.

What is now increasingly apparent is that small scale manufacturing is part of the Anew economy@. Market and technological forces have influenced operational, location and market decisions, and specialized small manufacturers are dealing with more knowledgeable and demanding clients who can compare local firms with those in other countries. New technologies are changing the scale and scope of manufacturing production. Some production of low cost, standardized, goods continues where low cost labour and few regulations apply. Increasingly, however, small batch production of sophisticated goods characterizes manufacturing which, with new technologies and production processes, can often be carried out in peripheral areas by small and medium sized firms.

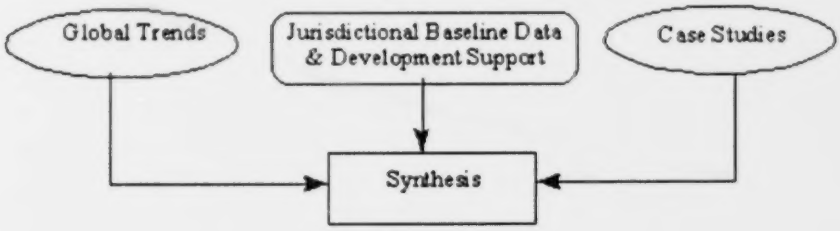
This new reality of manufacturing development is addressed in this report by reviewing research conducted over the past year as part of the Small Scale Manufacturing Study, undertaken in conjunction with the North Atlantic Islands Program (NAIP). This research undertook an in-depth analysis of the global trends affecting manufacturing, a case analysis of sixty manufacturers in four jurisdictions (Newfoundland, PEI, Iceland and the Isle of Man), and a jurisdictional analysis of these four plus five additional distinct geographic areas. Large-scale manufacturing, with centrally-controlled branch plants, has not been the focus of this study. Neither were large-scale industrial operations, such as shipyards, oil refineries, mineral production plants or paper mills. These propulsive industries though, do create opportunities for small-scale manufacturers.

This report highlights the opportunities for locally-based small and medium sized firms which are entrepreneurial and which can build on local strengths while exploiting external opportunities. Increasingly, the relationships between firms are blurring, as small firms enter long-term contracts with large, sometimes multinational firms. Small-scale manufacturers, by learning and applying the latest management techniques and adopting new production and information technologies - Abest practices@ - can create a competitive advantage which allows an export focus and which diminishes reliance on local raw material inputs. Access to local natural resources is still a strength to build on, but the basis of competitiveness is increasing the quality of human resources: management which has the ability to focus production, marketing and sales activities concentrated in those areas where the firm=s strengths can be best exploited, and the existence of a stable workforce with the skills to utilize the latest production techniques, implement quality processes and strive for continuous improvement and innovation. If small scale manufacturers can harness these strengths, distance from markets is no longer a barrier for many firms.

This report highlights the global trends and best practices small-scale manufacturers must address to succeed. It reveals that many local firms are doing just that and are succeeding in the four island jurisdictions studied. The research also reveals Abest practices@ for governments, industry associations, educators, and regional and community development organizations. If the small scale manufacturing sector is to grow and flourish in a jurisdiction, the institutions and organizations which support the efforts of individual firms and entrepreneurs must focus and coordinate their efforts. In Newfoundland and Labrador, government and industry have recognized the potential of small-scale manufacturing. The findings and strategies presented in this report build on current efforts to Amanufacture@ development in Newfoundland and Labrador.

2.0 Methodology

The study approach was three pronged as illustrated in Figure 1.



Each of the three study components, described in more detail in the following sections, was designed to provide distinct insights into manufacturing sector development. The Global Trends Study was initiated to identify and validate the general changes in manufacturing sector development, particularly for small-scale manufacturers. Concurrently, to understand the experiences of small scale manufacturers confronting these global trends, case studies of individual firms were carried out in four Aisland@ jurisdictions (cases in Labrador were included in

addition to the island of Newfoundland). These studies allowed confirmation and clarification of the general global trends as they affect small-scale manufacturers in jurisdictions with relatively small populations and distant from major metropolitan centres. A third study on Jurisdictional Baseline Data and Development Support was then undertaken to compare the development of the sector in these four areas to an additional five jurisdictions, and to determine how the supports for manufacturing contributed to sector development.

This final report was prepared based on the analysis of the three studies, as well as other recent research and reports (see Appendix IV), to generate a strategy for sector development. Throughout the project an advisory committee, comprising industry, community, university, and government representatives (see Appendix I for listing) assisted in the analysis of findings and development of strategies.

2.1 Global Trends Study

The analysis of the global trends influencing small scale manufacturing entailed secondary research on the global environment by review of periodicals, journals, magazines, and other publications. Key informant interviews were also held in Newfoundland and Labrador to determine the prevalence and applicability of these trends and the impact on the manufacturing sector. The study began with research of information on outsourcing, private labelling, impacts of technology, just-in-time management systems, and total quality management. As the study progressed, research was broadened to include core competency and supply chain management. The findings of this research are discussed in Section 4.1.

2.2 Case Studies

Case studies in four island jurisdictions, undertaken in partnership with the North Atlantic Island=s Program, were completed to gain insight into sector development in island economies. In total, 60 case studies were conducted, as follows:

Table 1 - Number of Cases Completed by Jurisdiction

Iceland	Isle of Man	Newfoundland & Labrador	Prince Edward Island
11	15	19	15

Companies were selected through consultation with jurisdictional key informants (see Appendix II) based on the following criteria:

- Companies had to be small to medium in size. Of the 60 companies interviewed, 56 had less than 200 employees, with an average of 38. The remaining four had exhibited extraordinary growth over the last few years.

These four companies were included in the qualitative analysis but were excluded from quantitative analysis to prevent skewing the results.

- Companies had to be involved in secondary rather than primary processing.
- Companies had to be non-resource-based, such that proximity to resource inputs was not key to the manufacturer=s competitive advantage.

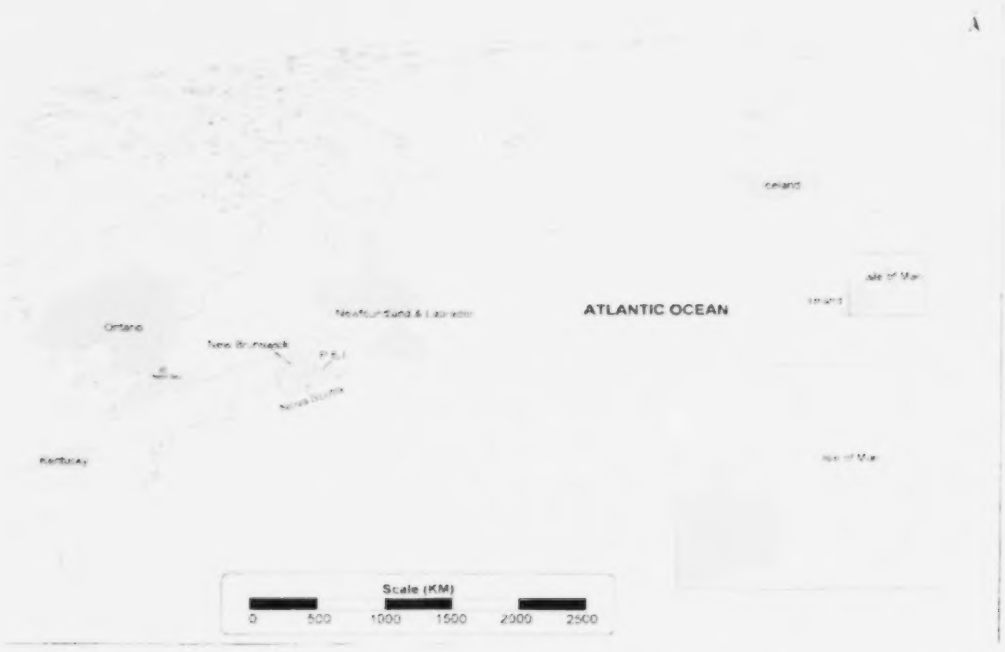
An interview guideline was generated, with assistance from Dr. André Joyal, Université du Québec a Trois-Rivières. Dr. Joyal has significant experience in researching small scale manufacturers in rural Quebec. The intent of the interview guideline was, through closed - and open-ended questions, to determine the attributes of successful firms by questioning companies on such topics as success factors, initial and current challenges, role of technology, role of networking, and competitive strategies. A copy of the interview guideline is contained in Appendix III. Interviews were conducted from May to October 1997 by researchers from Newfoundland and Labrador, Iceland, and the Isle of Man.

The individual firm information was then transcribed into three-page synopses. Quantitative and qualitative data were also entered into a database to allow for analysis by such factors as jurisdiction, company size, and the use of technology. Case study findings are included in Section 3.2 of this report.

2.3 Development Support Study

The Development Support Study was conducted to analyse the development of the sector in a range of jurisdictions, including what has been done in each to foster development. Baseline data and the analysis of government support for the manufacturing sector was carried out in: Prince Edward Island; Nova Scotia; New Brunswick; the Isle of Man; Iceland; Appalachia Region, Kentucky; Galway Region, Ireland; and North Bay Region, Ontario (see Figure 2 - Study Map).

Figure 2 - Study Map



These areas were included to provide a broad base for comparative analysis. Nova Scotia, New Brunswick, and Prince Edward Island were relevant comparisons given their proximity to and competitive position with Newfoundland and Labrador. The North Bay region was included as it is a resource dependent region within a central province in Canada. The Appalachian region of Kentucky was chosen for the same reason, but as it is in a state within the United States it enhanced analysis on the role of government. Iceland and the Isle of Man were included as they were both part of the North Atlantic Islands Program and provided additional insights into the significance of isolation and the role of government structures. Finally, Ireland was included as it is considered the leading jurisdictional success story on the North Atlantic rim in the past ten years. Research was conducted via secondary sources plus a combination of telephone and in-person interviews with key informants. The study involved the following components:

2.3.1. Jurisdictional Profiles

Jurisdictional profiles were developed and included information on geographic location, land mass, total gross domestic product, population, unemployment rates, and support structure.

2.3.2 Baseline Indicators

Where possible, baseline indicators showing overall economic and manufacturing development from 1987 to 1996 were gathered. Manufacturing employment and manufacturing=s contribution to gross domestic product are examples of the indicators included. The indicators reported on in Section 3.3 have been limited to those which are comparable across jurisdictions when such factors as differing inflation, exchange rates, and purchasing powers are accounted for. An analysis of

the trends arising in each jurisdiction, and possible causes for the trends and commentary regarding extraordinary events which may have impacted data, was then carried out.

2.3.3 Development Support Environment

This research included the following:

- Identification and analysis of the broad government policy toward the manufacturing sector in each jurisdiction.
- Identification and comparison of the supports in each jurisdiction for attracting and developing small scale manufacturers.
- Trend review and consultation with jurisdictional contacts to assess the impact of the support environment on small scale manufacturing. This encompassed views on: jurisdictional trends; the existence and importance of industry support services; how these supports contributed to sector development; government's role in aiding manufacturing sector development; the impact of government cooperation and coordination on industry development; and whether the absence of particular supports limited development.

3.0 Study Findings

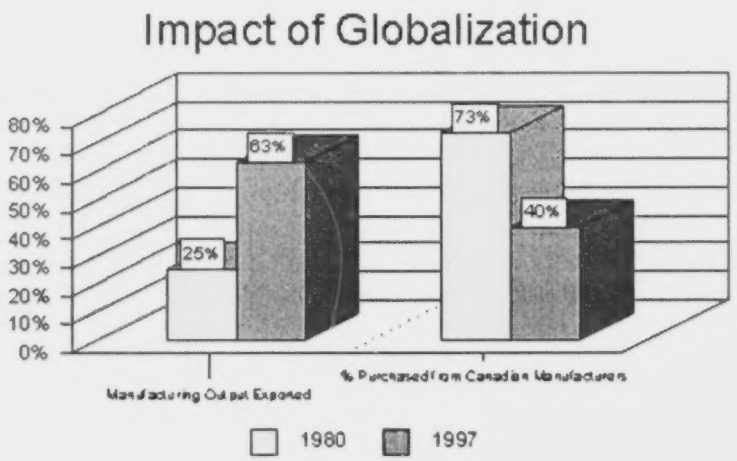
The Global Trends, Case and Base Line/Development Support Studies provide clear evidence that the changes occurring in manufacturing internationally are creating opportunities for entrepreneurs and firms in Newfoundland and Labrador. For manufacturers striving to enhance their competitiveness and for regions striving to foster manufacturing sector development, a common requirement emerges from the research - the need to focus. The key manufacturing trend globally, which is corroborated by the case studies of individual firms, is that successful manufacturers must focus on what they do best and market it better, rather than trying to produce anything for which there is a market. As will be discussed in Section 3.1 on Global Trends, manufacturers must determine their area of core competence and place greater emphasis on marketing what they do best. The case study findings described in Section 3.2 clearly demonstrate that the small scale manufacturers that do this sell more, export more and grow more.

The same applies to regions, be they a province, state or independent country. As detailed in Section 3.3, the jurisdictions which have experienced the most success in manufacturing development are those which have established and maintained a coordinated and sustained commitment to development and taken a strategic approach to identifying those sectors or activities for which the region has the best chance of success. For both firms and regions, globalization is the driving imperative to focus efforts. Global markets create enormous opportunities for those firms and regions that develop and maintain a competitive advantage, while global competition between firms and between regions and countries is sure to compromise those who do not focus on what they do best.

The following sections expand upon these findings and advance strategies for industry, labour, community development organizations, education and training institutions, and government.

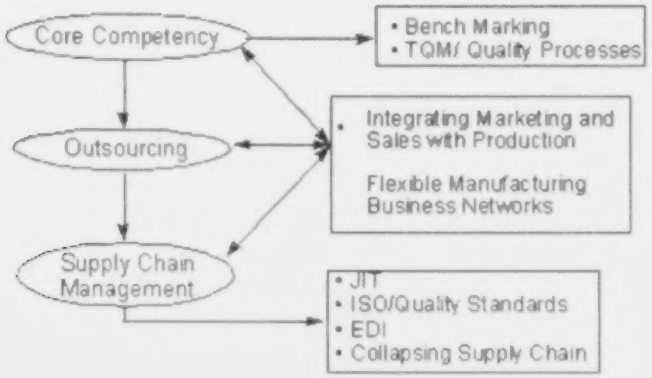
3.1 Global Trends

Globalization is having a major impact on manufacturing, both nationally and internationally. It creates new opportunities, yet at the same time exposes manufacturers to more competition. As an indication, in 1997, 65 percent of all goods manufactured in Canada were sold abroad as compared to only 25 percent in 1980 - a positive sign that Canadian manufacturers have done well in taking advantage of international opportunities. In turn, though, competition within the Canadian marketplace has increased. In 1980, for example, approximately 70 percent of the inputs purchased by Canadian manufacturers were manufactured by other Canadian companies. This decreased to 40 percent by 1997. This decrease was a result of Canadian companies realizing that in order to compete globally they have to source products from suppliers providing the best value - regardless of their geographic location. Hence, Canadian companies, while selling more product globally, also sourced increasing amounts of supplies internationally.



With globalization broadening the marketplace and increasing competition, customers are placing greater demands on manufacturers to increase quality while maintaining or lowering costs. If customers do not receive the value they desire in terms of delivery, quality, service, and price they shift to suppliers who can provide the package they desire. As transportation and communication linkages have improved, customers are no longer as limited by geography as they once were, nor compelled to deal with only mass manufacturers - they are more likely to seek out the most competitive manufacturers regardless of size or location.

The impact of globalization on manufacturing and the associated trends and best practices are encapsulated in Figure 4. These are elaborated upon in the rest of this section.



The changes in manufacturing due to globalization are propelling a shift in business development strategy away from approaches that once emphasized vertical integration, where it was considered advantageous to try to control all aspects of the operation, such as a car manufacturer operating everything from iron ore mines to retail outlets. While this effort to internalize production dominated thinking for over 50 years, manufacturing firms now recognize that in order to compete in a global market a strategy of concentrating on doing a few things extremely well must be taken. This is commonly referred to as concentrating on a **core competency.** To achieve core competency, activities that are not done competitively are out-sourced or secured through partnerships, joint ventures, or strategic alliances with firms having the core competency. In manufacturing, bigger is no longer necessarily better.

One means of assessing core competency is to analyse the company=s value chain. A company=s operations can be broken into six broad activities (each with numerous sub-activities): research & development, business analysis, manufacturing, administration, marketing, and distribution. In assessing core competency, a firm should first determine which, if any, of these activities it does competitively. If none are done well, the company is not likely to survive over the longer term unless it embarks on a strategy to obtain a core competency. If it decides not to go the route of core competency, it may continue to enjoy success in the short term but, given increased competition from core competent firms, it will likely begin to lose customers as competitors are better able to meet customer demands in terms of price, quality, delivery, and service. To achieve core competency, the firm must decide, for each of the operational areas, to: adopt the tools necessary to become core competent; partner with core competent firms; or purchase products/services from core competent companies.

A case study which exemplifies the value of a core competency focus is that of an Isle of Man manufacturer of the undercarriage hydraulic valves which are used to control landing gear operation on airplanes. Five years ago the company manufactured the full undercarriage assembly but was losing ground to competitors. Management assessed the company and realized the company=s skill lay in the manufacturing of the hydraulic valve component and it was marginal in the other areas. The company then entered into a strategic alliance with another that had skill in undercarriage manufacturing, allowing it to concentrate on the

development of hydraulic valves only. While sales decreased initially, they have since increased from that of five years ago, even though the company now operates with 40% less employees. The manufacturer contends that had it not refocused its efforts it would not be in operation today, and all of its 144 employees would have had to seek work elsewhere.

One technique for measuring and maintaining core competency is **bench marking**. Bench marking involves comparing a firm=s operations to the operations of other successful companies. Bench marking can range from comparing manufacturing processes of similar companies to learning from companies in completely different sectors. A famous example of the latter is Henry Ford=s discovery of assembly line production in meat packing plants, which he then used as basis for the production of automobiles. Bench marking identifies both measurement standards for comparison purposes as well as best practices which can be applied to the existing firm to improve competency.

In one Newfoundland case study, a company which manufactures mattresses for the import substitution market applied bench marking when designing its manufacturing plant. Before deciding on plant layout, company personnel arranged a tour of a well-managed manufacturing facility in another region. Permission was also obtained to bring along a video camera and this was then used by the plant manager to finalize the manufacturing set-up. In another example, a shoe manufacturer compared itself to its competition in terms of flexibility, turn around, and delivery time. Once the shoe manufacturer measured these, it was able to convince its main customer that it possessed advantages in all these areas, and was thus able to win back the customer from its lower cost, Asian competitors.

To ensure core competency is maintained and enhanced, and the needs of the customer are met, the concept of **total quality management (TQM)** can be incorporated into all aspects of a company=s operations. TQM is as much a management philosophy as a tool, in that management must commit to TQM and communicate to employees that quality assurance and improvement is crucial to the business operation. TQM then becomes a tool to ensure that all individual aspects of the business are managed and operated using a quality focus. If all components are managed using TQM, the likelihood of continuously maintaining and improving quality in a businesses product or service increases. Even where a full TQM approach is not adopted, a range of quality processes can be implemented to ensure that customer needs are constantly monitored and addressed.

The majority of companies interviewed recognized the importance of quality and the value a total quality management philosophy has within the organization. One such company is a PEI beverage manufacturer which refused to purchase lower quality ingredients when prices of high quality ingredients rose. The company chose not to follow the competition and lower standards, but rather to absorb the increased costs. While the company=s bottom line suffered for a couple of years, the company maintained its quality reputation and customer loyalty increased. When ingredient prices dropped and competitors reverted back to using the better ingredients, the company maintained its customer base.

Once a company identifies its core competencies, it can acquire other inputs, functions or services through **out-sourcing**. One Newfoundland company which recognises the value in out-sourcing is a casket manufacturer which purchases the rounded casket lids from another supplier because it takes a different process and skill level to manufacture this component. Another company which concentrates on core competency manufactures and markets only thermostatic controls for water heating devices such as electric kettles. The company, based in the Isle of Man, does the research, development and manufacturing associated directly with the thermostatic control but it does not manufacture wiring, heating coils, or any other component - rather it works with other suppliers as directed by customers such as Kenmore and Phillips. This company is considered the quality leader and customers rely on the company to provide quality control for all electronic components associated with the heating device. Due to the relationship it has developed with its customers and the reliance customers place on the company in terms of quality assurance, its growth has been phenomenal. This company now has a 75 percent world market share in thermostatic controls, employs 700 people, and has sales of over $120 million CDN. In 1980, it had less than forty employees and only five years ago sales were in the range of $40 million CDN.

Firms which focus on what they do best, rather that producing whatever they can sell, place greater emphasis on **integrating marketing and sales with production.** If they provide inputs to other firms, such as the producer of the rounded casket lids and the thermostatic control manufacturer in the examples above, their market lies in the production process of other manufacturers. On the other hand, companies which focus on both core competence and sales to the end user must ensure that marketing, sales and service effectively deliver the product of their core competence, since they have relinquished other potential income generating production through out-sourcing.

Flexible manufacturing is the way to minimize the risks of specialization. As will be discussed in Section 3.2, focussing on core competence seldom means manufacturing a single product. Rather, it means specializing in a particular type of product, a particular market niche or a specific manufacturing process. Flexible manufacturing enables the firm to apply its core competence to new product variations, to satisfy a market niche in new ways or to apply a production process to manufacture products for widely ranging markets. One PEI company produces a full range of products related to Ann of Green Gables - its core competence is in the market niche, not a specific product or process. An Icelandic metalworking company=s core competence is in the use of Computer Numerically Controlled (CNC) machining equipment. This allows high precision production that can be easily adapted for different products without high costs or long delays for re-tooling.

As small scale manufacturers focus on their own core competency, *supplying* other manufacturers with inputs or *relying* on other manufacturers for inputs which are then utilized for their own production, **business networks** become an additional means of minimizing the risks of specialization. Rather than enter into a market transaction every time they need an input, two or more firms with complementary core competencies establish on-going relationships. Business networks usually involve more than two firms, which form consortia or joint ventures to bid on projects or meet particular markets, or to cooperate in joint purchasing, share

equipment or coordinate transportation. A high technology manufacturing firm in Newfoundland provided specialized assembly for a small light beacon attached to life jackets. The components were produced by two other firms and the product was owned and marketed by a fourth company. Such ongoing relationships require firms which not only have complementary core competencies, but which are also able to establish working relations founded on trust. The Asurvival-of-the-fittest@ spirit of free market competition must be tempered by an ability to collaborate, or else individual, specialized small firms are even more exposed to the challenges of global competitors.

Even where business networks are established, manufacturers who are linked in outsourcing relationships must become adept in **supply chain management**. The supply chain is the network of inter-connected firms which supply inputs to other firms which do further production or assembly and then market the product to the end user. Supply chain management increasingly involves a process of squeezing time and cost out of the supply chain. For small-scale manufacturers, careful monitoring and management of the supply chain is a critical success factor. Aiding supply chain management are various tools such as **quality standards (eg. ISO 9000)**, **electronic data interchange (EDI)**, and **just-in-time (JIT)** inventory systems. Quality standards enable companies in the supply chain to rely on each other. If one company depends on another as part of a global supply chain, it needs assurances that the inputs or products will arrive in time with the right quality. Electronic data interchange is the process of electronic data sharing amongst members of the supply chain. It is driven by technological improvements and is often critical to membership in the supply chain. Electronic data interchange allows such activities as automated ordering systems between the customer and manufacturer, integrated management information systems, quick exchange of electronic technical drawings and facilitates communication between members of the supply chain.

A Just-in-Time (JIT) inventory system is another tool that removes time from the supply chain while shifting risk and cost down to suppliers. With JIT, customer demand drives the ordering system and suppliers must react within a certain amount of time. The amount of time (lead time) is dependent on the type of customer and industry but can range from hours to weeks. If unable to guarantee delivery within the lead time, that manufacturer will not be able to secure contracts within that supply chain. Rather than the retailer carrying large inventories, all members of the supply chain carry only enough to satisfy demand during the lead time. This forces all supply chain members to share the inventory costs but reduces costs to the customer while improving delivery time. As the emphasis in manufacturing is more focussed now on the customer, a JIT system has become an integral tool in improving service while minimizing costs.

There are many examples of companies who are active in supply chain management. One Newfoundland company which is a sub-assembler of electronic components, arranged for a consignment warehouse near the customer to satisfy any concerns regarding delivery as the two companies were located 2500 kilometres from each other. A Prince Edward Island company which services the aerospace industry provides added value by arranging all transportation and paperwork for the customer. Another company, based in PEI, which manufacturers

micro-brewery systems provides a full advisory service in terms of staff training, plant setup, and facility operation. This company also negotiates contracts with suppliers of raw materials (malt, hops, etc) for its customers.

A final trend is the **collapsing supply chain**. As firms merge and partner or take-over other firms, the market for many products is becoming more concentrated. The takeover of K-Mart by Zellers is a recent example. Outsourcing continues but there are fewer retail buyers. With increased buying power, retailers and other companies which supply products to the end user insist on fewer suppliers, who in turn manage supplier relationships with few sub-contractors. Companies are trying to minimize the time and cost of numerous transactions. They want longer-term relationships with a core group of quality-controlled, electronically integrated suppliers, thereby limiting access to the supply chain. This is prevalent in the food, apparel, and automobile industries, to name a few, and presents both greater rewards and risks for manufacturers as securing large contracts is more common but this increases the reliance by the manufacturer on fewer customers. This re-emphasizes the need for manufacturers to exercise supply chain management and to ensure continuous improvement in core competency to maintain competitive advantage.

One Isle of Man company that manufactures the heat transfer paper used to transfer print designs to fabrics recognized the collapsing supply chain and began offering design exclusivity to customers. Its competitors found it difficult to offer this service given that they were much larger and economies of scale did not allow it. A second Manx company, which manufactures computer keyboard covers, decided to by-pass the supply chain and sell directly to retail customers using a courier service. This company has nineteen employees and sales in excess of $2.3 million CDN, of which 70 percent are international. This is also an excellent example of a firm integrating sales and marketing with production.

For small-scale manufacturers these trends are not without risks. Many of the trends and related techniques identified in this study, such as out-sourcing, just-in-time, electronic data interchange, and supply chain management, are designed to cut time and costs from the production system, allowing the manufacturer to be the lowest cost producer in its product category. Suppliers must then cope with the demands of shorter lead times and the pressure to reduce costs or else risk being squeezed from the supply chain in lieu of a company which can cope with these demands.

If they are to compete successfully in this type of environment, manufacturers located in regions such as Newfoundland and Labrador must be aware of these downward pressures, be able to plan for them, and have the financial resources to meet them. To adopt management practices such as core competency, or to take advantage of opportunities such as out-sourcing or private-labeling as a business strategy, they must fully understand the implications such trends have for manufacturers located in peripheral locations. While issues such as transportation logistics and additional costs have become less of an obstacle, they have not disappeared completely, and are part of the business reality in which Newfoundland and Labrador manufacturers must operate.

To compensate for greater distances to market or the uncertainties of ferry transportation, companies who participate in just-in-time supply chains from island or remote locations often have to carry increased inventory for a variety of logistical and customer-driven reasons. In the case of Newfoundland and Labrador manufacturers who source supplies from out-of-province companies, they often have to over-stock raw material inventories to cover contingencies. In case of supplying into the chain, a Newfoundland manufacturer selling product into an Ontario-based just-in-time inventory system may be required to warehouse sufficient inventory in Ontario, so that the customer can be confident they will have a constant supply of product. Both these scenarios reflect the increased cost of doing business from remote locations.

Core competency attainment can lead to similar problems in finding and working with the right out-sourcing partner. If a Newfoundland manufacturer is concentrating on core competency and out-sourcing other aspects of the operation, it is likely that some of the out-sourced production will be completed by firms located in other parts of the country. This again has cost and transportation implications. There are economies of scale to be reached in out-sourcing, but this has cash flow implications for the business and can require additional working capital.

A third potential competitive disadvantage that peripherally-located firms often suffer is the inability to recognize and develop out-sourcing and private labeling opportunities. The processes of recognizing or creating the opportunity; developing a strategy to capitalize on it; finding the right partner or partners; developing the product; and getting it to market on time and at a competitive cost add up to be a complex undertaking. This can be particularly difficult for firms which have not traditionally operated in out-of-province markets. The costs of exploring these markets from peripheral locations is higher than from a central location close to the decision-makers and national buyers, usually in southern Ontario and Quebec.

While these disadvantages exist, they do not necessarily make operating from a peripheral region uncompetitive. In fact, peripheral firms have a number of advantages in terms of lower occupancy costs, stable labor force, and reduced labor costs that tend to balance the other extra costs of doing business from these areas. This was clearly shown in a recent KPMG study which outlined St. John=s as the lowest cost place to do business amongst 42 cities in North America and Europe.

Overall, given increased globalization and improvements in transportation and communication infrastructure , companies in peripheral regions can be viable, and often possess strategic advantages over their centrally- located competitors. Those that create competitive advantages and concentrate on core competency can compete in the global marketplace. Strategies are outlined in Section 4 to aid manufacturers in dealing with the challenges associated with operating from a peripheral area and are directed toward the continued development of core competent firms in Newfoundland and Labrador.

3.2 Case Studies

The results of the sixty case studies clearly demonstrate that the experience of the manufacturers studied verify the global trends identified through secondary research. It is important to note that the companies interviewed were not selected by a random sample, nor was the sample large enough to make statistical inferences. Firms were selected consistent with the criteria set out in Section 2.2, and within each jurisdiction a cross section of regions and sub-sectors was included. While not statistically representative of all firms in these jurisdictions, the results highlight practices and experiences which are common in the sixty firms studied and in the four island jurisdictions. Lessons can thus be generalized on the basis of this analysis to point to best practices from which the entire industry may benefit.

Table 2 provides a demographic profile of the companies studied.

Table 2 - Jurisdictional Overview

Category	Iceland	Isle of Man	Newfoundland & Labrador	Prince Edward Island	Full Sample
# of Firms	11	15	19	15	60
Average Employees	42	47	19	56	38
Employee Turnover	9%	8%	5%	5%	7%
Non-Jurisdictional Sales	25%	97%	45%	65%	59%
Past Growth	10%	9%	18%	21%	15%
Future Growth	10%	19%	20%	13%	15%
Age < 10	22%	8%	100%	33%	40%
11 - 20	11%	46%	0%	33%	29%
> 20	67%	46%	0%	33%	31%

The average number of employees in the case study firms was 36, ranging from 19 in Newfoundland to 56 in Prince Edward Island. Employee turnover was relatively low at an average of 7% per year. The percentage of sales derived from outside the jurisdiction ranged from 25% in Iceland to 97% in the Isle of Man. Past growth averaged 15%, ranging from 9% in the Isle of Man to 21% in Prince Edward Island. Past growth was possibly higher for Newfoundland and Prince Edward Island as there were a greater proportion of younger firms interviewed in these jurisdictions and new firms would normally attain a higher annual percentage growth given that they are in the growth phase of the company life cycle.

Table 2 provides an overview of the case studies by jurisdiction. In conducting the case study analysis, emphasis was placed on determining what distinguished the more successful firms across all jurisdictions rather than doing jurisdictional comparisons, which would be limited due to insufficient sample size. Detailed financial data were not available to determine return on investment rates, but success could be measured based on sales per employee, growth and exports. In light of this, the primary determinant of competitiveness identified in the global trends study, core competency, was used as the basis for analysis. Determination of whether a manufacturer was concentrating on core competency was based on a review of responses to interview questions. Emphasis was placed on whether the company had identified its competitive advantages and success factors and whether it was focussed on a specific product type, market niche, and/or manufacturing process.

Core competent firms know what they do best and understand what is critical to the customer. They focus on being better than competitors in producing a particular product type, servicing a specific market niche, and/or using a particular manufacturing process.

Other firms that did not have this specific focus took a more generalist approach to doing business. The generalist firms were more likely to go after various opportunities rather than ones that matched their specific strengths and advantages. In essence, ***generalist firms produce whatever they can sell rather than focussing on what they can do best and marketing that more effectively.***

Thirty-eight of the sixty firms interviewed (63 percent) were considered to be concentrating on their core competency. This ranged from 27 percent of the Icelandic case studies to 80% of the companies interviewed from the Isle of Man and Prince Edward Island. As core competency appears critical for firms competing in global markets, given that the majority of the companies interviewed in the Isle of Man were export reliant whereas those interviewed in Iceland were more apt to sell in domestic markets, the differences in core competency between the companies interviewed in the two jurisdictions is not surprising. Of the nineteen companies interviewed in Newfoundland and Labrador, eleven or (58 percent) were considered core competent.

Strategic focus on core competence clearly enhances success. Table 3 shows the differences in the characteristics of core competent and generalist manufacturers. Sales per employee are greater for manufacturers that focus on core competency as is the percentage of non-jurisdictional sales. Both past growth and anticipated future growth were much higher for core-competent companies. Company age, though, was not a determinant of core competence as both core competent and generalist manufacturers were well dispersed within the categories of age. This suggests that core competency is more a function of management philosophy and strategy than age. The focus on core competency presents benefits in both sales and employment levels, in that the core competent firms are more likely to employ more people and attain higher sales levels as compared to generalists.

Table 3 - Type of Firm

Category	Core Competent	Generalist
# of Firms	38	22
Sales per Employee	$135,000	$125,000
Employee Turnover	6%	7%
Non-Jurisdictional Sales	76%	38%
Past Growth	20%	6%
Future Growth	18%	10%
Age < 10 11 - 20 > 20	36% 34% 30%	46% 18% 36%
Employees < 10 10 - 49 > 49	13% 55% 32%	36% 46% 18%
Sales < 1 m 1 - 5m > 5 m	17% 34% 49%	40% 33% 27%

The remaining analysis compares the core competent and generalist firms on a number of attributes. Tables 4 to 6 deal with differences between core competent firms and generalist firms concerning the adoption of technology, proactive market development and proactive product development. Tables 7 to 11 present the case study findings on how these firms access information and network with other firms, including trade show attendance, which also relates to marketing. All these factors relate to the broad but crucial area of innovation in business development. A recent *Strategy for Enterprise in Ireland* placed innovation as a central focus for manufacturing as Ait is the key to profitable growth.@ The strategy notes that innovation includes all aspects of business operations and is not limited to technology, and that much innovation involves incremental continuous change rather than radical changes based on adoption of entirely new processes. A study of 500 medium to large scale manufacturing firms in the United Kingdom showed that, over a twelve-year period, the innovators averaged higher profits, higher growth and a market share of about five times the share of the non-innovators.

Table 4 shows the differences in new information and manufacturing technology adoption between the two firm types. In the companies interviewed, technology use could be broken into four categories. Firstly, where the manufacturer did not use new technology in its business activities. Secondly, where the company used computer technology in the office to aid payroll, accounting, and other clerical

functions. The third category is the use of new technology for the office and marketing functions. Examples of marketing technology include customer databases, management information systems, electronic ordering systems and web pages. The final category was the use of new office and marketing technology along with the use of relatively advanced technology in the production process. This could range from computerized machinery and electronic drafting software to robotics. Table 4 shows that almost half of the generalist companies do not use technology in either marketing or production functions. As outlined previously, the market is becoming more global and customers are demanding greater value from manufacturers. As a company=s ability to gather information, maintain customer service, improve product quality, and control costs is enhanced through technology, the lack of technology adoption by generalists is limiting their ability to compete globally.

Table 4 - Role of New Technology

Category	Core Competent	Generalist
Do Not Use	3.0%	9.0%
In Office Only	5.0%	38.0%
Marketing/Office	34.0%	13.0%
Market/Office/Prod	58.0%	40.0%

Table 5 indicates that core-competent and generalist firms take a much different approach to marketing. The core competent firms were more likely to actively identify and research new markets. The generalist firms, were more reactive with respect to marketing. In light of the need to integrate marketing and sales with production, highlighted in the Global Trends study, it is clear that generalist firms focus on production, not on producing what they are best at and marketing it better.

Table 5 - Proactive Re: New Markets

Category	Core Competent	Generalist
Reactive	5.0%	23.0%
Average	25.0%	27.0%
Proactive	70.0%	50.0%

Core competent firms also ranked themselves high in ability to react to changes in the marketplace and to be flexible in terms of introducing new and modifying existing products, as shown in Table 6. This is important given the need for

flexibility as outlined in the Global Trends study. These are also crucial elements for firms to be innovative. A focus on core competence requires bench marking and quality processes to proactively monitor and respond to changing production and market demands and opportunities. A core competent firm may not need to innovate in the short term to be profitable, but when faced with increased global competition and changing customer demands, only the innovative firm will keep ahead of the competition in the long term.

Table 6 -Ability to React to Changes in the Marketplace

Category	Core Competent	Generalist
Slow to Adapt	0%	23%
Average	5%	36%
Fast to Adapt	95%	38%

The manner by which firms gather information was also different for core competent versus generalist firms. Table 7 shows the different philosophy with respect to trade show attendance between the two groups. The interviews provided evidence that the core competent firms used trade shows strategically and as a source of competitor information whereas many generalists believed trade shows had little value and considered trade show participation detrimental, as competitors might learn about their company=s products and operations.

Table 7 - Trade show Attendance

Category	Core Competent	Generalists
Seldom Attend or Visit	29%	54%
Visit/Display Some	18%	18%
Show & Visit Regularly	50%	27%

Table 8 illustrates the value placed on journals, magazines, and periodicals as a source of information. Once again, the core competent firms were more apt to gather information from external sources.

Table 8 - Information Source: Journals

Category	Core Competent	Generalists

Poor	17%	62%
Average	19%	10.%
Good	64%	28%

If generalist manufacturers relied on other firms for marketing and information their lack of pro-activeness in these areas would be less of an issue. Yet, as is indicated in Table 9, these firms are also less likely to partner with others. The core competent firms are more likely to be involved in formal networks which directly contribute to business operations such as joint ventures, partnerships, and strategic alliances. Generalist firms, in contrast, are more likely to avoid partnerships and participate in informal networking activities only. Once again, this is an important distinction given the role of networking in core competency attainment and managing supply chain opportunities.

Table 9 - Networking Activities

Category	Core Competent	Generalist
None	8%	33%
Informal Only	36%	28%
Formal and Informal	66%	39%

It is instructive to note that generalist firms place greater importance on industry associations as a source of information, as indicated in Table 10. Given this, associations are good avenues to supply relevant information to generalist firms.

Table 10 - Information Source: Associations

Category	Core Competent	Generalist
Poor	44%	29%
Average	20%	24%
Good	36%	48%

Generalist firms, though, place less value on government as a source of information as indicated in Table 11. This is not surprising as governments more often react to requests for information and since generalists are not information

seekers, government would not be a good source. This differs from industry associations, as associations are more likely to forward general information to members.

Table 11 - Information Source: Government

Category	Core Competent	Generalist
Poor	39%	53%
Average	33%	29%
Good	28%	18%

The core-competent and generalist manufacturers also differ when making location selection decisions. As seen in Table 12, the core competent manufacturers are more likely to base decisions on business criteria such as access to markets, labour supply, access to inputs, and available assistance rather than non-business reasons such as lifestyle and long-term residency. This suggests that core competent manufacturers are more apt to be attracted to areas offering competitive advantages.

Table 12 - Rational for Location Decision

Category	Core-Competent	Generalist
Business	49%	28%
Assistance	22%	14%
Non-Business	29%	58%

With respect to current challenges, while there were many commonalities between the two groups, there were a few areas where the groups differed, as can be seen in Table 13. Core competent firms identified transportation and quality as an issue more often, which is not surprising given their focus on global markets. Generalist firms were more likely to identify capital as the major challenge. Once again this is not surprising given the different levels of success between core competent and generalist firms. Core competent firms have more resources because of their profitability and the business case is likely to be more attractive when seeking commercial financing.

Table 13 - Current Challenges

Category	Core Competent	Generalist
Managing Growth	22%	17%
Competition	17%	20%
Securing HR	15%	9%
Transportation	13%	3%
Quality	13%	3%
Working/Growth Capital	7%	27%
Gathering Information	7%	3%
Productivity	3%	6%
Other	3%	12%

The core competent and generalist firms also differed somewhat with respect to human resource issues. Core competent firms were less likely to identify any human resource problems, but when they did, the major problem identified was actually sourcing employees. Generalist firms, though, were more likely to identify other problems, such as staff turnover. Core competent firms place greater emphasis on human resources suited to a work environment requiring innovation and learning. On average, generalists do not require the same level of expertise and therefore would have fewer problems finding employees, but do not offer the opportunities for skills development and advancement in a growing business that helps keep employees. This was corroborated by the interviewers= observations of the work environment and by other comments made by interviewees. As an example, one core competent firm in Newfoundland spent in excess of one year interviewing and hiring personnel to ensure they had the proper human resources upon which to build the company.

In summary, the firms interviewed which showed greater success were those identified as being core competent. A jurisdiction wishing to develop its manufacturing sector would be wise to support the attraction and development of core competent firms. As indicated, core competency is not dependent on size, resources, or location but rather it is a function of the company=s management ability, strategic focus, information utilization, and resource application. If a jurisdiction targets core competency in its programs and supports it can have significant impact on sector development. Evidence of this exists within the case studies from the Isle of Man given the prevalence of core competent firms in that jurisdiction. This is possibly due to its small local market which forced Manx companies to seek global opportunities rather than relying on import substitution.

The Manx government recognized this and tailored its supports to enhancing global competitiveness. This has encouraged the development of technologically-able, market-oriented firms which view human resources as an integral component of the business operation. As is elaborated on in the next section, few other jurisdictions have employed such a targeted strategy.

3.3 Development Support Study

The Development Support Study assessed nine jurisdictions to provide further lessons from the experience of similar maritime jurisdictions (Nova Scotia and New Brunswick), other resource-dependent regions in Canada and the United States (the North Bay region of Ontario and the Appalachian region of Kentucky) and the apparent success story of Ireland. Baseline data were gathered on the status of the economy and manufacturing in particular, as well as information on the way each jurisdiction supports manufacturing development. Some data were unavailable for the North Bay region and the Appalachian region, as they are sub-regions of a province and a state, but data are provided for both Ontario and Kentucky.

The research in all nine jurisdictions revealed that there is no obvious explanation for level of economic development based on location, population or other factors essentially out of the control of private and public sector actors. The political and economic powers harnessed to meet the needs of the region are significant, as are cultural and traditional approaches to education and cooperation in the society. Factors involving specific conditions required for manufacturing sector development are available to all jurisdictions: having a coordinated and sustained commitment to sector development; taking a strategic approach; and harnessing partnerships and champions for strategy development/implementation. All jurisdictions have essentially the same range of business supports and no particular program or financial incentive can be seen as decisive in the development of the sector - there are no Asilver bullets.@ Increasingly, nonetheless, the more successful jurisdictions are gearing the range of supports to address the emerging trends in manufacturing. These jurisdictional Abest practices@ are outlined in the following sections.

3.3.1 Jurisdictional Profiles

Table 2 provides a jurisdictional overview showing the general strength and performance of each economy over the past ten years. From this, inferences are made as to the jurisdictions successful in spurring general economic and specific manufacturing sector growth. It is important to note that the jurisdictions studied varied in terms of size and government structure, which helped to isolate factors contributing or impeding sector development across the jurisdictions. In addition to the four NAIP islands, this section includes statistical comparisons with the other Atlantic Canadian provinces as well as Ontario, Kentucky and Ireland. This enables a broader consideration of the relative success of sector development, as small island economies are often dismissed as unable to provide the basis for competitive success. The analysis of how jurisdictional authority, resources and strategy are used in supporting sector development also draws on this broader

comparative analysis to assist in delineating the general jurisdictional Abest practices@ and those which indicate the unique advantages or disadvantages of island jurisdictions.

When reviewing general economic strength Iceland, the Isle of Man, Kentucky, and Ontario have to be highlighted given their low unemployment rates and high GDP per capita. In terms of overall economic growth, Ireland=s 5.0 percent, the Isle of Man=s 5.3 percent, and Kentucky=s 3.1 percent annual growth rates stood out when compared to the other jurisdictions. Much of this growth was driven by expansion in the manufacturing sector, especially in Ireland and Kentucky as in these jurisdictions growth in the manufacturing sector outpaced overall economic growth. This sector growth was largely achieved through productivity improvements.

Ireland=s growth has yet to produce the low unemployment and high economic output as compared to the other jurisdictions but remains remarkable given that Ireland was one of Europe=s least developed economies a decade ago. The Kentucky experience should be viewed as a indication of the strength associated with an economy built on manufacturing. The state of the Irish, Kentucky and Ontario economies must be qualified by the fact there are significant regional disparities within each jurisdiction which are not indicated by aggregate statistics. Many rural areas within these jurisdictions still lag in terms of development. The Isle of Man=s performance proves that small, peripheral economies can outperform larger, central economies.

Newfoundland & Labrador holds similar promise if current trends can be built upon. In the past two years the manufacturing sector=s contribution to the provincial economy has grown by more than 20 percent and in 1998 the industry accounted for over 17000 "*full-time, equivalent@* jobs. Growth is occurring in areas the province has traditionally had strength, such as in fish processing and newsprint. These two sectors have experienced combined employment growth of approximately 15 percent since 1996 and account for 50 percent of the provincial manufacturing sector. Growth is also occurring in areas in which provincial companies are acquiring new core competencies such as in manufacturing recreational vehicles, marine animal tracking equipment, windows, metal fabrication and electrical products. There are now over 800 manufacturing companies in the province, 20 percent more than in 1994, manufacturing and selling products within the province, across Canada, and throughout the world.

Table 2 - Jurisdictional Profiles

Category	NF	ICE	IoM	IRE	KEN	NB	
Overview							
>96 Pop. (000's)	560	270	72	3567	3857	753	

Land (000's km^2)	390	103	1.5	70	103	70	
Gov. Form	Prov.	Rep.	CD	Rep.	State	Prov.	I
1996 Status							
Unemployment Rate	18.8%	3.9%	2.8%	13.5%	5.6%	12.8%	1
Manufacturing % of GDP	7%	17%	10%	35%	30%	14%	
Per Capita GDP	17979	28355	23445	23165	30179	21385	2
86-96 Growth							
GDP	1.5%	1.6%	5.3%	5.0%	3.1%	2.1%	
Manufacturing Sector Overall	-1.2%	-0.3%	2.5%	6.4%	3.9%	1.9%	(
Manufacturing Employment	-4.4%	-1.3%	0.5%	1.9%	2.0%	0.6%	-
Manufacturing Labour Productivity	3.2%	1.0%	2.0%	4.4%	1.8%	1.3%	

It is clear that, individually, government form, location, land mass, economic strength, and population size do not predetermine sector growth. When jurisdictions as different as Kentucky, Ireland and the Isle of Man can experience success it is obvious that it results from a combination of factors. The indicators presented provide both an overall appreciation of the context within which manufacturers operate and an understanding of the manufacturing status within the respective jurisdictions. They do not provide a clear understanding of how small-scale manufacturers have fared, nor do they assist in discerning what factors have contributed to manufacturing development. To determine this, the Development Support Environment in each jurisdiction was reviewed.

3.3.2 Development Support Environment

The economic indicators for each of the jurisdictions studied provide an overall appreciation of the context within which small-scale manufacturers operate. The statistics on manufacturing provide an understanding of the status of all manufacturing in the respective jurisdictions, including large-scale as well as small-scale manufacturing.

To understand what factors have contributed to small-scale manufacturing development in these jurisdictions, government and industry publications were reviewed from each and site visits were made to interview key informants from the private, public and community sectors. From this research five key aspects of the development support environment emerged as crucial components for the development of the sector. No one jurisdiction can be considered to have them all Aright@, and indeed, what is the right way to manage them in one jurisdiction may not be appropriate in another. It is clear that maximizing the opportunities for sector development requires each of the five to be considered and comparing how they are approached across these jurisdictions can be seen as a form of Adevelopment support benchmarking.@

The five components to consider in shaping the development support environment are:

1) Supportive Socio-Economic Environment;
2) Coordinated and Sustained Commitment to Sector Development;
3) Strategic Approach;
4) Partnerships and Champions for Implementation;
5) Business Supports for Best Practices.

These components constitute a continuum of interventions, from the very macro to firm-specific micro supports. All these factors effect the ability to develop the manufacturing sector. As the review of these factors will reveal, applying these Ajurisdictional best practices@ requires adaptation to the specific conditions of each location. There is no template for economic development that can be universally applied. There are lessons, however, which will contribute to manufacturing development if applied in manner complementary to the specific conditions in each location.

This section will draw from the review of the nine jurisdictions to outline these best practices. It does not provide a comprehensive listing of how each jurisdiction applies - or fails to apply - each type of intervention. The background research reports for this study and government and industry publications from each location provided this detailed accounting. The intent here is to highlight the elements of a successful manufacturing development strategy by drawing on this research. For Newfoundland and Labrador, and for any jurisdiction wanting to maximize the contribution of the manufacturing sector in its economy, these best practices must be understood and, as much as possible, harnessed.

Supportive Socio-Economic Environment

The socio-economic environment is largely a given in the short to medium term for a specific jurisdiction, but the characteristics of a society or the governance structure have profound impacts on the development of specific economic sectors. These characteristics must be taken into account when trying to apply lessons from one location to another. Applying lessons from Ireland or Iceland to Newfoundland and Labrador, for example, must take into account the different tools at the disposal of an independent country compared to a province, as well as differences in culture and attitudes. The socio-economic environment must also be considered when

conducting the environmental scan which forms an initial component of strategic planning (discussed in more detail below). Finally, to the extent that governments, citizens or community or sectoral organizations can influence the broad context of their society, it is important to understand what factors contribute to long-term economic development.

As noted, the organization of government in a jurisdiction has profound impact on what tools are available to support economic development in general, or the development of a specific sector. Iceland has proven that a small population in a remote region can foster a prosperous society by building on their resource base. This has been focussed primarily on the fishery in Iceland, both in terms of its management and development. As a nation, even with just 270,000 people, Iceland exercised its sovereignty in opposing foreign over-fishing in the 1970s.

Iceland has also been very successful in developing manufacturing linkages with the fishery, both in the production of equipment and capital goods used in the fishery and in value added production of fish products. Significantly, in the late 1980s, Iceland utilized its macro economic tools as an independent nation by adjusting exchange rates to give the industry - including manufacturers - an advantage in their own market and enhancing their ability to compete on price internationally. Whether this was an effective approach in the longer term can be debated, as real GDP growth slowed and real manufacturing sector growth was negative from 1987 to 1996. Iceland=s performance during this period was still remarkable in light of pressures on fish stocks and the relative performance of other fishery dependent jurisdictions during the same period.

Ireland is another independent country which utilized its national status and the tools that come with it to support development. Unlike Iceland (which to date has not joined the European Union, largely to defend its fish stocks from demands by European fishing nations), Ireland chose to use its national status as a vehicle to gain the benefits of the larger European Economic Community (EEC). When it entered the EEC in 1973, industrial output and exports increased with access to the European market. In 1979, it entered the European monetary system, which encouraged stable exchange and interest rates and low inflation.

In themselves, however, these benefits were not sufficient to overcome high unemployment rates and dependence on agricultural production. Significantly, Ireland also benefited from the system of Astructural funds@ available to members of the EEC which qualified for transfer payments to support social and economic development. Between the late 1970s and the early 1980s, these transfers were usually equivalent to between 4 percent and 7 percent of Ireland=s GDP each year. During the 1990s, this has declined as Ireland=s economic growth accelerated. This will be elaborated upon in more detail below, in terms of how Ireland has utilized these funds with a coordinated and sustained commitment to sector development and has taken a strategic approach. Finally, when many countries were promoting the service sector as the source of economic growth in the 1980s, Ireland targeted manufacturing as a key propulsive sector for long-term development. Manufacturing was singled out with a modest 10 percent corporate tax rate in the mid-1970s and this rate has been maintained to the present, even in the face of pressure from the European Union to level the playing field in Europe.

The Isle of Man is an example of a jurisdiction that does not have full autonomy, but as a British Crown Dependency has used the powers it possesses to influence economic development. Key amongst these has been the Isle of Man=s status as a tax haven, which it initiated in 1961 when it withdrew from the UK system of direct taxation through the abolition of surtax on personal incomes.

As a semi-autonomous jurisdiction, the Isle of Man also gained special status when the UK became a full member of the EU in 1973. The Isle of Man gained free trade with the EU, but is not involved in any budgetary commitments nor in any programs involving tax harmonization, the provision of services or the movement of individuals. As will be noted below, the financial resources and entrepreneurial climate fostered by the success of the financial services sector has benefited manufacturing development. Unlike Iceland, however, the Isle of Man does not have power over exchange rates or base interest rates, which are set in the UK. The level of jurisdictional authority varies from one location to another, and jurisdictions may choose to exercise this authority differently, but it does constitute a very real component of sector development support.

With respect to the social environment, all jurisdictions have recognized that social and economic strategies must be integrated. Ireland has been particularly innovative in this regard. For three decades, Ireland experienced considerable industrial relations turmoil, but beginning in 1987, national strategies have been negotiated by the Asocial partners@ - government, business, labour and farm organizations. These partnership agreements have moved beyond the confines of industrial relations to take in the overarching framework of linking wage agreements with an integrated approach to policies on taxation, social security, public finances, exchange rates, monetary policy and curbing inflation. Ireland has also placed great emphasis on education and training, introducing phased abolition of fees for undergraduates in 1995. The Isle of Man has a similar post-secondary system.

Iceland, like other Scandinavian countries, has a strong tradition of corporatism, where employers and labour organizations work with government in setting broad national policies. Also in common with the other Scandinavian countries, Iceland has a culture which promotes literacy and high educational attainment. University education is essentially free and graduates are funded to pursue post-secondary education outside the country and return to Iceland with their expertise and global contacts.

Canadian provinces and American states enjoy significant powers over social and economic development within federal systems. As an example, provinces have the latitude to establish tax rates for manufacturers and Newfoundland and Labrador has exercised this power to establish the lowest manufacturing sub-national tax rate of any province in Canada. Macro policy instruments, though, are reserved for the national level of government. Newfoundland and Labrador released a Strategic Social Plan in 1998, which commits to the integration of social and economic development. Unlike fiscal and monetary policy, social initiatives are more within the control of sub-national jurisdictions like provinces and states, but it is clear that financial resources and a coordinated approach with the national level are essential for successful implementation. The instruments of national governance are important contributors to a supportive socio-economic context for sector

development.

Coordinated and Sustained Commitment to Sector Development

While macro economic instruments and socio-cultural traditions and initiatives contribute to the creation of a positive environment for sector development generally, more specific interventions are needed to target individual sectors and marshall a coordinated and sustained commitment to develop targeted sectors. How coordination is achieved can vary from one jurisdiction to another, depending on the organizational characteristics of government and industry. Similarly, mechanisms to achieve a sustained commitment to develop a sector can vary, but it is clear that continuity of support for a sector is crucial if long-term results are to be achieved.

Over the past ten years, Kentucky targeted international companies which would benefit from the state=s centralized location and aggressively pursued these manufacturers. In conjunction with this they modified the educational system such that graduates possessed skills of relevance to manufacturers. Recently, concern has been raised that too much attention was being placed on the attraction of large-scale manufacturing firms, so now the Cabinet (Department) of Economic Development is exploring ways to encourage greater opportunities for local firms to supply products and services to those attracted in through outsourcing opportunities.

The Cabinet of Economic Development in Kentucky has also established the Kentucky Economic Development Partnership, which includes the Governor, eight private sector business people and four government officials. The partnership oversees the Department to provide long-term continuity of policies and programs and is credited with instilling a private-sector, aggressive pro-business attitude.

Ireland is perhaps the best example of a jurisdiction which has specifically targeted manufacturing and has clearly assigned authority and responsibility to agencies with the mandate to lead development in a coordinated manner. The Industrial Development Agency (IDA) was established in 1949 to implement an outward-looking strategy of investment prospecting, in contrast to previous protectionist policies. By the 1970s, Ireland had the most generous industrial incentive package in Europe and with the development of the European Union, Ireland offered a low-cost entry point for American and Japanese firms to assemble manufactured goods for duty-free access to the European market.

Not unlike current concerns in Kentucky, the IDA=s success in investment prospecting led to fears that the Irish economy was becoming dominated by outside ownership. In 1973, overseas firms accounted for 60 percent of industrial output and almost 33 percent of total manufacturing employment. Consequently, another agency, called Forbairt, was established in 1993 to focus on developing indigenous Irish companies which had potential to expand and become exporters. Through the coordinated policy approach provided by Forfas, another agency which leads economic policy research and development, and the single Ministry to which they all report, the IDA and Forbairt coordinate manufacturing development, such that local firms are becoming part of self-sustaining clusters with externally-controlled

firms, particularly in the subsectors targeted by the agencies. Out-sourcing and supply chain management thus become regionally-based, allowing for firms to focus on core competence, supply specialized services and develop specialized workforces. The low-cost advantages of Ireland are thereby replaced with competitive advantages, which can sustain themselves now that other jurisdictions are adopting the same attraction incentives.

In 1998, Forbairt=s role was expanded by including the former Irish Trade Board under its responsibility, giving it enhanced means to coordinate export development for domestic Irish firms. Forbairt also took on responsibility for industrial and technical training, providing a more direct means to link education and training with economic development. The new, larger agency, is now called Enterprise Ireland.

Ireland has implemented its sector development efforts through agencies which are arms-length from line departments of government. The Irish constitution limits the number of Departments which can be created, so such agencies - which are usually called Acompanies@ in Ireland despite being publicly funded - have evolved due to these institutional constraints. The independence of these agencies allow them to be flexible and innovative in responding to business needs. Through clearly defined mandates, guided by long-term development strategies (elaborated upon more below), Enterprise Ireland and the IDA carry out their mandates in a coordinated manner and with the continuity of focus over time to achieve results.

In the Isle of Man, unlike Ireland, support for manufacturing is led by a government department. Manufacturing is prominent in the Department of Trade & Industry, which works closely with industry, including regularly scheduled meetings between the Minister and the Manufacturing Sub-committee of the Chamber of Commerce to discuss issues of the day.

As in the Isle of Man, the Atlantic Canadian provinces have line departments which lead sector development. Nova Scotia, New Brunswick and PEI each have one department which leads support for business development, export development and investment prospecting within the province. Newfoundland and Labrador has one department with the mandate for business and regional development within the province, while a second department leads export development and investment prospecting.

Unlike Ireland or the Isle of Man, however, the development departments of Canadian provinces are mirrored by equivalent federal government agencies. Industry Canada is the federal department responsible for business and trade development at a broad sector level, as well as providing leadership on technological innovation on the national level. The Atlantic Canada Opportunities Agency (ACOA) is a regional agency, responsible for direct business and regional development support within the respective Atlantic provinces. ACOA also plays a coordination role for all federal departments and agencies relating to economic development within each province and for the Atlantic Region. As a regionally-based agency, however, it is often difficult for ACOA to achieve a focussed and coordinated federal approach to business and regional development when its federal partners are line departments reporting directly to Ottawa.

While part of a federal system, in Kentucky national government business support programs are channelled through the state government, not through parallel delivery agencies. Iceland, like the Isle of Man, has a single department within its unitary system. Coordination is thus a greater challenge in the Canadian system than in any of the other jurisdictions studied. Federal-provincial cost-shared agreements have been key coordinating mechanisms for strategic sectoral, trade and regional development programming in Canada. The agreements have usually promoted a strategic approach, and joint management of agreements increases communications and cooperation.

To enhance the chances of development efforts to contribute to sector development there is little doubt that a coordinated and sustained commitment is required. Ireland, the Isle of Man and Kentucky have demonstrated the greatest success in manufacturing sector development over the past ten years, and while they have varying levels of jurisdictional authority, they have all targeted manufacturing and coordinated and sustained their support for the sector. Iceland has not targeted manufacturing as a priority sector, other than as part of its overall fishery development strategy. With the challenges in the fishery over the past decade it is not surprising that the country=s manufacturing performance has not been strong. For the Atlantic Canadian provinces, the fisheries crisis has led government to aggressively pursue new economic development strategies. In light of the challenges to coordination and sustained commitment under the Canadian federal system, it is clear that innovative approaches will be required to focus the development and implementation of new economic strategies.

Strategic Approach

Taking a strategic approach to manufacturing refers to identifying the jurisdictional competitive advantages and focussing on the development of specific sub-sectors or target markets based on this analysis. It also entails a review of the respective strengths of sub-regions within the jurisdiction and then compares these to opportunities and threats in the global arena to identify the long term opportunities upon which to base development. Even though most of the jurisdictions studied have small populations, the labour force characteristics, physical infrastructure and the existing capabilities of firms vary from one locality or sub-region to another. As noted in the sections on global trends and best practices, linkages between firms are increasingly important, and the sectoral opportunities within specific areas must be strategically targeted.

Ireland and the Isle of Man are examples of jurisdictions which have taken a coordinated and sustained approach to manufacturing sector development and advanced this through a strategic approach. In each jurisdiction strategic analysis of the sector was carried out to identify particular strengths within the region for specific sub-sectors, which also offered external market opportunities. The Isle of Man accomplished this though the use of external consultants with expertise in the specific sector while Ireland delegated this responsibility to Forfas, with implementation through Forbairt (now Enterprise Ireland) and the IDA.

Because of its small population and low unemployment rates, the Isle of Man has targeted manufacturing development with high value and as little labour input as possible. As it is geographically very small, it has not needed to consider sub-regions in strategic targeting. Ireland focussed on manufacturing in high technology sectors which were experiencing tremendous growth globally and which could benefit from Ireland=s English speaking workforce, financial incentives and strategic location as a point of access to the European Union. The country=s emphasis on education was then focussed on the needs of these sectors. Electronics has been a key example of this, such that a third of the computers sold in Europe are now made in Ireland, and the country has received a third of all American investment in European electronics since 1980. At a sub-regional level, Forbairt established regional offices which worked closely with local organizations (elaborated upon in the next section) in targeting sub-sectors on a regional level. In the Galway region of Ireland, for example, medical device manufacturing has been targeted and now the IDA focuses some of its investment prospecting efforts on that sub-sector. Five such innovative sectoral clusters have been established in the largest centres in Ireland as strategic priorities. Technical colleges, infrastructure, business support, as well as investment prospecting, are then channelled to produce results.

Iceland has not focused on particular sub-sectors at the national level, but has supported regional development efforts through the Institute of Regional Development. This arms-length agency has an independent board of directors and reports to the Prime Minister. It cost-shares regional economic development officers with municipal governments in Iceland which, like local governments throughout Scandinavia, are very strong. Local and regional development efforts are increasingly exploring diversification opportunities through a strategic approach, but to date most Icelandic manufacturing has been centred on the production of inputs and secondary processing related to the fishery.

The provincial government in Newfoundland and Labrador developed a strategic economic plan in 1992, based on an analysis of provincial strengths and opportunities. This included an extensive public consultation process carried out by an advisory council to the Premier. The findings of this process led to the release of the strategic economic plan which highlighted opportunities in manufacturing and technical industries, tourism and culture, energy and traditional resource industries. Implementation was assigned to various provincial government departments, and several federal-provincial agreements were designed to support areas of shared federal and provincial priority.

The 1992 Newfoundland and Labrador Strategic Economic Plan included strategies related to manufacturing, with a particular focus on Atechnical industries@ to build on the province=s strengths in marine industries and electronics applications. A new federal-provincial agreement, discussed further in the section on Business Supports, was implemented based on the strategic economic plan and significant progress has been made in advancing these sectors. Because of the nature of the technical industries focus, much of the manufacturing support was targeted in the St. John=s region, consistent with the clustering opportunities and utilization of university and research and development infrastructure there.

The Strategic Economic Plan also called for the creation of economic zones throughout the province, to allow strategic planning to identify rural and regional strengths. This initiative (elaborated upon the next section) has advanced and forms a key opportunity to extend the initial focus of the strategic economic plan to strategic sectors in all areas of Newfoundland and Labrador. In 1996, the provincial government established the Department of Development and Rural Renewal (DDRR), to lead government support for the economic zones. The government also committed to advance efforts to attract new investment and promote the expansion of manufacturing and processing enterprises, especially in rural areas. This report, and the strategies outlined as a result of the research undertaken, represent the advancement of a strategic approach to realizing this commitment. Consistent with this approach, the Department of Industry, Trade and Technology recently established a Corporate Development Group, with the specific mandate of identifying strategic sub-sectors on a provincial and zonal basis for targeting of its investment prospecting activities.

Strategic planning has also been carried out in the other Canadian Atlantic provinces and in Kentucky. Where successes have been achieved, they have been the result of a strategic approach applied with a sustained and coordinated commitment to the development of the sector. Strategies without committed implementation are paper exercises; a commitment to implementation without a strategic approach leads to ad hoc actions which fail to target interventions and build on strengths and opportunities. Where there are a multitude of development agencies, industry associations and community-based organizations, this research has also clearly indicated that a strategic approach can greatly assist in achieving a coordinated effort. This is elaborated upon in the next section on how implementation of sector strategies requires partnerships and champions.

Partnerships and Champions for Implementation

Implementing manufacturing development strategies is most likely to succeed through a partnership approach. This applies to partnerships between the major stakeholders in the society at the national or jurisdictional level, as well as to partnerships at the community or regional level.

Ireland has supported the establishment of various partnerships to coordinate implementation at the local and regional level. There are 36 Apartnership companies@ with a mandate to integrate social and economic development at the local level. These arms-length Acompanies@ have been funded by the Irish government, with volunteer boards of directors drawn from business, labour and other Asocial partners.@ Under an EU program, funding has also been accessed to establish LEADER Groups in rural areas, to promote small and medium sized enterprises, investment in training, rural tourism, and processing and marketing of local produce. Finally, in 1993, the same year Forbairt was established to work with successful Irish firms, County Enterprise Boards were funded by the Irish Government to develop small local companies with fewer than ten employees, especially in small-scale manufacturing and other sectors offering growth potential for local firms. There are 35 County Enterprise Boards, all operating within county boundaries.

Many expect the myriad of local and regional Irish development Acompanies@ to be rationalized over the next few years, as EU development funds are reduced. Partnership companies have also been criticized in an evaluation carried out by the Organization for Economic Cooperation and Development, for failing to incorporate sufficient local democratic accountability. A 1996 Irish white paper on local government recognizes this and proposes to enhance the role of local government.

Iceland, like other Nordic countries, enjoys very strong local government. The Icelandic system of kommune government provides significant authority and financial resources for local government, including an active role in economic development. Kommunes tend to include several individual communities, with recent amalgamations increasing the size and resources of most. Individual kommunes also partner with each other in the employment of regional development officers, which, as noted above, are cost shared with the national government. Consistent with the focus of the national government in Iceland, most kommunes have focussed on activity related to the fishery, although diversification efforts are increasingly being recognized as necessary, along with the need for a strategic approach.

In Kentucky, there are municipal governments for individual towns and cities, but county government plays a dominant role in many local government functions, including economic development. Each county has a full-time mayor, called the County Judge Magistrate, and the Kentucky Industrial Development Council consists of representatives of each county who coordinate development activities and share information. The Cabinet for Economic Development has three regional offices, but it is the economic development officers employed by individual counties, or the County Judge Magistrates in smaller counties, that lead development efforts. To qualify for the business incentives offered by the state, however, firms attracted through investment prospecting - referred to as recruitment efforts - must be approved by the Cabinet for Economic Development. While they share information through the Industrial Development Council, there is significant competition between counties and the Cabinet strives to provide a state-wide coordination function. One thing they have in common, which does not diminish the competition between counties, is that they all focus on recruitment of manufacturing firms.

Despite the significant success of manufacturing development through recruitment activities and the relatively high levels of development indicated by statistics on the Kentucky economy, the state is characterized by significant economic disparities between prosperous counties and those clustered in the Appalachian Region of eastern Kentucky. In 1995, the Kentucky Appalachian Task Force released a report after an extensive public consultation process, recommending a more integrated approach to regional development. In particular, the Task Force called for a more community-based approach to planning, involving the private sector and non-government organizations, as well as municipal, county and state governments.

In the three large Atlantic Canadian provinces (other than PEI), significant efforts are underway to harness regional economic development planning for many of the same reasons as in eastern Kentucky. Traditional resource industries can no longer maintain the labour force in these areas, and development efforts imposed without

involving local organizations and governments have not harnessed the commitment of local groups and local opportunities needed for success.

New Brunswick has the longest experience in working with regional business-municipal partnership organizations, through the twelve Industrial Commissions, which date back almost twenty-five years. Each Commission provides business development support and develops strategic plans for its area, and the province has built on these in its strategic investment prospecting. The best known success of this approach has been in the Greater Moncton area, which targeted information technology and call centres. In Industrial Commission areas affected by the fisheries crisis, strategies determined the strengths offered by unemployed fisheries workers matched with external opportunities. Firms expanding or establishing in New Brunswick cite the Ateam@ approach, involving federal and provincial agencies, building on provincial strategies linked to regional strengths and implemented through federal, provincial and local partnerships.

Newfoundland and Labrador has seen a major initiative advanced by the federal and provincial governments in partnership with community-based stakeholders in twenty Aeconomic zones@ which cover all areas of the province. Based on the recommendations of a task force with equal representation from government and non-government representatives, the federal and provincial governments endorsed the creation of a Regional Economic Development Board (REDB) in each zone. These democratically elected, volunteer boards include representation from business, labour, municipalities, community economic development groups, education and training institutions and other stakeholders within the respective zones.

The primary task of each REDB is to develop a strategic economic plan for the zone, which then becomes the basis for performance contracts with the federal and provincial governments to channel available resources to business, infrastructure and human resource development initiatives consistent with the shared priorities agreed upon in the strategic plans. Newfoundland and Labrador has had a long history in community economic development, most notably through a network of voluntary rural development associations. Seldom did these associations involve municipalities or the business community, however, and the coordination and focus of federal and provincial government supports through performance contracts had not been achieved at the local level.

Economic zones are still in their infancy in Newfoundland and Labrador, but they are an example of the strategic targeting and multi-stakeholder partnering which is evident as a necessary best practice for successful sector development. Over half of the economic zones have targeted manufacturing as a strategic priority in their area. The plans tend to chart broad directions at this stage of the process, but efforts to set implementation priorities are driving more detailed consideration of local and regional strengths and weaknesses.

In the Exploits Valley Economic Zone, in central Newfoundland, the REDB identified the work of local development corporations at the community level as a key means to implement on-going manufacturing development efforts. In particular, the Bishop=s Falls Development Corporation has been very successful in working

with federal, provincial and municipal governments to manage a development fund the town received in 1989 when the railway was closed. Bishop=s Falls had been a railway distribution centre and significant employment losses were seen to justify government transitional support. Under a community-based board, with federal and provincial government officials as resource people, a strategic plan was developed for Bishop=s Falls to take advantage of significant railway infrastructure and the community=s location mid-way across the province, close to international port and airport connections. Small-scale manufacturing was targeted, the local Development Corporation was provided focussed responsibility at the community level, and a strategic approach was taken. Local firms were supported and external firms were attracted to utilize common infrastructure. This, in turn, provided out-sourcing opportunities and a cluster of inter-dependent firms emerged. One of the key benefits used to entice the manufacturer of top-end recreational vehicles, for example, was the existence of a local fibreglass manufacturer and skilled cabinet makers. The Corporation=s efforts have seen the number of manufacturing firms triple in the area and the number of manufacturing employees surpass the number laid off by the railway. Prior to the railway=s closure seventy-five people were working directly with the railway. There are now currently over two hundred people working in small scale manufacturing in the area.

In North Bay, Ontario, the mayor, a former Newfoundlander, followed the Moncton experience as a model in forming the North Bay Economic Commission, comprising the mayor, three City Councilors, the President of Nipissing University and nine business representatives. The Commission worked closely with the Chamber of Commerce, which has nine hundred members in the area, to establish business-led sector committees to lead strategic planning in specific industry clusters. Industrial Adjustment Service committees (IAS), funded under a federal government program administered by Human Resources Development Canada, have been used more in North Bay than anywhere in the country to support the work of these committees. Efforts have focussed on establishing supplier linkages with branch plants of German, Swedish and South African equipment suppliers which located in the region to service the mining and forestry sectors. The engineering capability of the local management and workforce and the use of the latest manufacturing technologies have been channelled into locally-based, export oriented firms.

Inter-firm and inter-agency collaboration has been key in the North Bay experience. The area established some seventeen production and marketing networks under the Canada Business Networks Program funded by Industry Canada. To enhance coordination between federal, provincial and municipal departments and agencies, local and regional officials meet informally every two months to cooperatively address issues and initiatives in support of business development.

A final aspect of partnerships for implementation involves the role of business and labour. Without exception, each jurisdiction has attempted to involve representatives of the business community in developing and implementing development strategies. The role of labour has been less clear. In Iceland and Ireland organized labour has played a pro-active role in national and local partnerships to develop manufacturing and the economy as a whole. Newfoundland has provided for labour participation in economic zones and the Provincial strategic economic plan highlighted the need for labour-management cooperation in

economic development. In the other jurisdictions, labour has been seen as a necessary partner at the firm level, but seldom has it been represented in pro-active development efforts. The changing structure of manufacturing, with out-sourcing to multiple suppliers, presents challenges to traditional labour relations approaches in large-scale, centralized manufacturing. It may be that various jurisdictions are experimenting with differing approaches. Further research into best practices on the role of labour could contribute to additional insights into manufacturing development and economic development more broadly.

Appropriate strategies and structures, finally, are only as effective as the people who put them to use. Both the North Bay and Bishop=s Fall=s experiences involved a key role played by champions in local development efforts. The level of direct involvement of a champion may vary from national to local efforts, as a local catalyst is also more likely to play a key implementation role. In each case, however, the sustainability of development requires the catalyst to bring together partner organizations and individuals, creating the synergies that maximize impact and create competitive advantage. Often in remote or rural areas, there is a tendency to discourage those who Astand out from the crowd@ and try to lead new initiatives as business people or as community leaders. It is clear from this research that such Achampions@ are crucial to business, sectoral and regional development. Efforts must be made to encourage and support champions; without them development will not happen.

Business Supports for Best Practices

In reviewing the development support environment, it was important to determine if similar supports to businesses were provided in each of the jurisdictions studied. Governments often engage in Ajurisdictional benchmarking@ by comparing their support programs to those of competing regions or nations. If similar supports exist, the differences amongst jurisdictions in sector development cannot be attributed to Asilver bullets@ which can be introduced in the form of new programs to produce quick results. It is more difficult to introduce and maintain the longer term conditions for sector development outlined above: a supportive socio-economic environment; a coordinated and sustained commitment to sector development; a strategic approach; and partnerships and champions for implementation. Even in terms of business supports, it is important to distinguish between financial and non-financial supports for business development generally, and those supports which incorporate the best practices for manufacturing success in light of the global trends.

Table 15 provides a synopsis of business supports and whether they are available by jurisdiction. The review of policy and programs information from each jurisdiction and on-site key informant interviews indicate that all jurisdictions have a similar suite of financial and non-financial supports. While there are variations in the focus of programs and the level of funding committed to various instruments, the differences in jurisdictional sector development cannot be attributed to significant differences in government supports to the sector - there are no Asilver bullets@. Since governments are constantly comparing and competing in the means to

attract new firms and develop existing industry, new programs in one location are soon adopted in another or existing programs are modified to meet the competition. These programs are necessary to compete, as is price with manufacturers, but they are not the determinant of relative success. With manufacturers this comes down to quality, delivery, customer service, and the ability to improve the customer=s competitive advantage. The same is true for the business support programs offered by different jurisdictions.

Newfoundland and Labrador currently offers all but one these supports, and the leading jurisdictions have fewer than are offered here. There are differences in the manner in which these supports are targeted and delivered, as discussed above, and there is room to target available supports to the emerging trends in manufacturing production more effectively. The following four sections briefly outline those programs, or program gaps, which should be highlighted based upon the findings of this study for successful manufacturing development. These will then assist with specific strategies on program supports for Newfoundland and Labrador.

Table 15 - Business Supports

Category	ICE	IoM	IRE	KEN	NB	NF/LB	NS	ONT	PEI
1 Business Financing									
- Loans/Guarantees	Y	Y	Y	Y	Y	Y	Y	Y	Y
- Grants	N	Y	Y	Y	Y	Y	Y	Y	Y
- Equity Infusion	Y	N	Y	Y	Y	Y	Y	Y	Y
- Equity Tax Credits	N	N	N	N	Y	N	Y	Y	Y
- Working Capital	Y	Y	Y	Y	Y	Y	Y	N	Y
2 Incentives									
- Tax Reductions	Y	Y	Y	Y	Y	Y	Y	Y	Y
- Tax Credits	N	Y	N	Y	Y	Y	Y	Y	Y
- Land/Facility Aid	N	Y	Y	N	N	Y	N	N	Y
3 Business Operations									
- R& D	Y	Y	Y	N	Y	Y	Y	Y	Y
- Marketing/Exporting	Y	Y	Y	Y	Y	Y	Y	Y	Y
- Quality/Productivity	Y	Y	Y	Y	Y	Y	Y	Y	Y
- Business Planning	Y	Y	Y	Y	Y	Y	Y	Y	Y
- HR Training	Y	Y	Y	Y	Y	Y	Y	Y	Y
4 Business Networks									
- Sector Cluster Grants	N	N	N	N	Y	Y	Y	Y	Y
- Bus. Network Grants	Y	Y	Y	Y	Y	Y	Y	Y	Y

Business Financing. There are many business financing issues which are common to all small and medium sized firms, but which have not been reviewed in detail by this study. However, the case study findings yield evidence that for core competent firms, focussing on what you do best - whether it is a product, a market and / or a manufacturing process - leads to greater sales, exports and growth. It is therefore not surprising that core competent firms have fewer problems accessing capital than more generalist firms.

It is also clear, however, that private and public funding agencies require a better understanding of the needs of manufacturers, particularly in light of the emerging trends in manufacturing production. All case study firms indicated that commercial banks are not responsive to manufacturers for start-up or expansion capital. Private

venture capital and government financial supports, in that order, are noted as the primary sources of such financing. For firms in areas with depressed economies or dispersed populations, venture capital can be particularly hard to access because investment capital clusters where business clusters - more money is in circulation in developed areas and venture capitalists can meet prospective investments face-to-face. In underdeveloped regions, government and community-based sources of financing are addressing a market gap in business finance availability. As evidence of this, only one of the case companies interviewed cited financial institutions as a primary source of start-up or growth capital.

The criteria used by funding agencies can vary, however, based on the context and the resulting policy objectives of the jurisdiction. As an example, the Isle of Man uses net economic benefit, productivity increases, and increased export sales as funding criteria. If, as in other jurisdictions, job creation were a central part of the criteria, different decisions and business approaches would likely result. Ironically, it can be argued that placing undue weight on job creation criteria alone in business financing can diminish a focus on core competency attainment, as specialization can result in leaner, albeit more productive, firms. In the long run, a viable manufacturing sector will contribute to long-term, viable employment.

In general terms, manufacturing is favoured by existing government business finance support programs in Newfoundland and Labrador. Approximately 35 percent of funding under the Business Development Program of ACOA has been approved annually on manufacturing projects, in the form of repayable loans. The Department of Development and Rural Renewal has invested 25 percent of its Strategic Enterprise Development Fund in manufacturing since the department was created in March 1996. Some 70 percent of this was outside St. John=s and over 80 percent was for start-ups and expansions. These funds can take the form of loans, guarantees or equity investments. The Business Development Bank of Canada (BDC) and fifteen Community Business Development Corporations (CBDCs) are also available to provide funding to businesses which meet their approval criteria. The BDC also provides targeted support for firms to achieve ISO certification with re-payable loans.

Since the BDC and CBDCs aim to achieve self-sustainability through their lending portfolios it is difficult for them to assist firms which are not already competitive. This is consistent with the fact that core competent case study firms were generally well able to access capital. In essence, repayability or equity considerations limit funding to those firms which have a well established track record or which can demonstrate that they have the best chances of success. For firms not possessing this, agencies with a greater developmental focus (such as the Department of Development and Rural Renewal) are challenged to help generalist firms focus their activities, adopt best practices and enhance their competitiveness. In this, existing funding must be targeted, to help in the pre-commercial development of a product, assessment of new markets or the adoption of best practices so that they can reach the stage where other funding sources will assist them.

Incentives. The approach taken by Ireland through tax incentives, financial support and human resource development geared to meet the needs of external investors was cited above as key to its early success in positioning itself as a launching pad

for American and Japanese firms to access the EU. American cities and states have long practised Arecruitment@ activities as the basis of industrial development, and Kentucky=s experience is no different. Such incentives are now seen as prerequisite to being in the game, but they alone do not account for differences in success in manufacturing development. The increased effort by all jurisdictions to integrate domestic development, infrastructure, human resource development, and investment prospecting, bears witness to the need to create competitive advantage in targeted sectors. While Kentucky has had great success in investment attraction, there is an emerging consensus there amongst economic development officials that the existing loan and tax-based supports alone are insufficient for entrepreneurial start-ups, and that more equity capital support is needed, coupled with professional support for business plan development, marketing assistance and other counselling and mentoring activities.

In 1995, Newfoundland and Labrador introduced the Economic Diversification and Growth Enterprises (EDGE) program to stake its place in the investment attraction competition. Eligible firms can be external or local. They receive a ten-year holiday from provincial corporate income and payroll taxes, a further five-year tax phase-in, unserviced Crown land for $ 1 and municipal tax breaks in some areas. A government facilitator is also appointed to work with each firm to address regulatory issues and other business needs. Minimum investment and employment creation criteria must be met and the firm must not compete with existing firms in the province. To date, 70 percent of the firms to receive EDGE status have been manufacturers. Again, as with business financing, manufacturing is the favoured sector for investment attraction efforts utilizing tax incentives.

The establishment of Regional Economic Development Boards in the twenty economic zones provides the opportunity for the Department of Industry, Trade and Technology, which administers the EDGE program, to link investment prospecting with the economic opportunities identified in zone strategic economic plans. The incentives and supports available from EDGE, combined with business financing supports, constitute the means to close a deal with an investor rather than as the basis for a deal. As has been seen from each of the jurisdictions studied, success in manufacturing development requires a focussed approach, with strategic infrastructure and human resource development coordinated with the needs of the sector. As revealed in the review of global trends, and confirmed in the case studies, understanding the relationships between firms in outsourcing, supply chain management and business networks is critical in targeting external firms which complement local needs and strengths.

A final aspect of investment prospecting which emerged from the jurisdictional comparisons may be of most benefit to island jurisdictions or other areas with a strong sense of identity. In Ireland, once strategic analysis determines a sector which offers potential for development, and particular inward investment needs are identified, particular firms are targeted which match these requirements with sector development possibilities. The IDA then determines which firms have senior management of Irish descent who can be approached in the first instance as the means to develop some personal relationship with the firm. As with business financing, investment prospecting requires building trust on both sides, and the common bond of culture and heritage produces results for the IDA.

The Isle of Man has formalized this approach with the creation of Manx Business Connections (MBC), an arms-length agency with an independent board and a full-time administrator. The MBC was established to create a world wide network of people willing and able to assist the economic development of the Isle of Man. These people are generally previous residents of the Island or are affiliated with the Manx people in other ways. It was introduced to help government develop and implement its strategy for attracting quality companies compatible with the Isle of Man, promoting Manx companies globally, and identifying international opportunities. The Department of Industry, Trade and Technology in Newfoundland and Labrador operates the Ambassador Program in much the same way. At the local level, Bishop=s Falls similarly targeted Newfoundlanders operating businesses in mainland Canada.

Generally, the case studies conducted for this research revealed that business operators citing lifestyle or staying in their home town as the reason for their location were less likely to be core competent firms. These were individuals who decided they did not want to leave their community and started a business to meet local needs as a means of making a living where they want to live. By contrast, specialized firms locate based on the business case. Insufficient cases were studied to make conclusive statements, but based on several cases - in Newfoundland, PEI and the Isle of Man - *those individuals who returned home with specialized skills and contacts, did achieve core competence.* A case can therefore be made that investment prospecting is greatly assisted by targeting individuals from your region or jurisdiction, whether as a conduit into larger firms or as potential operators willing to re-locate. These individuals appreciate the quality of life of the region but have gained the product, management or market knowledge necessary to achieve core competence. For regions that have historically experienced significant out-migration, this presents a very real opportunity to benefit from the networks of expatriates living worldwide.

Business Operations. As listed in Table 15, supports for business operations, as categorized for this study, include support for R&D, marketing and exporting, quality and productivity, business planning and human resource training and development. These are all business functional areas that relate to any sector, and are not dealt with comprehensively by this report. However, there are particular lessons concerning the trends in manufacturing development that require tailored approaches if jurisdictions hope to maximize the benefits of their business operations supports for manufacturing. In most cases, no new programs are required by governments to address these approaches. Rather, existing programs can be targeted more effectively once development agency staff, private sector and community-based clients have a better understanding of the latest manufacturing best practices. Where existing programs cannot address the requirements of best practice adoption, new programs or funding sources may be required.

The Isle of Man provides financial support for international marketing activities, quality attainment through total quality management programs and for ISO 9000, and technology acquisition through financial support for technology, plant and equipment purchases that improve quality while reducing human resource requirements. The Isle of Man government also provides training assistance for new employees requiring aid with new processes and technology.

Ireland, Iceland, and Kentucky can also be cited for significantly targeting global trends. Ireland has specific supports for export-oriented manufacturers, new technology acquisition, quality management systems, bench marking, core competency attainment, and ISO 9000. Iceland promotes inter-firm linkages and strategic alliances, core competency, ISO 9000 attainment, technology development and skill transfer through the Technology Institute of Iceland (ICETEC). Kentucky has focused heavily on technology transfer, human resource development, and quality assurance through its 17 regional technology training centres and 54 area training centres. Kentucky also provides technology assistance through the Kentucky Technology Service and actively promotes business networking amongst companies.

Several new approaches to manufacturing development support have been piloted in the United States in the past decade. Business Retention and Expansion (BRE) programs have been supported by local and county governments, in partnership with state governments, universities and technical colleges and institutes, and the private sector. These efforts have attempted to work with local businesses as opposed to the traditional focus on recruitment of outside firms. BRE programs involve local Amanufacturing improvement outreach teams@ which survey the needs of local manufacturers and work with municipalities, private utilities, training institutions and other support structures outside the control of the individual firm. The various support agencies are represented on the teams. They collaborate with manufacturers to address their tax and infrastructure issues, utility rates and human resource development requirements.

Another approach taken in the United States has been supported by funding from the United States Department of Commerce, delivered through the National Institute of Standards and Technology. Modelled on the long-standing agricultural extension service in the US, manufacturing modernization centres have been established in universities and technical colleges to provide industrial engineers and other technical support to individual small scale manufacturers. Total assessment audits are performed through one-day visits to manufacturers, in consultation with management and production staff. Within days an audit report is produced, identifying a prioritized list of improvement opportunities, sources of assistance to address immediate needs and suggesting options to address more complex issues, such as accessing more specialized expertise. Such internal analysis is provided on a confidential basis and evaluations of results have shown clear benefits, often in the short-term.

A study of the national system of manufacturing modernization centres sponsored by the Appalachian Regional Commission (ARC), which included its experience in Kentucky, noted that there was a role for such a service to be provided by the public sector. Small scale manufacturers were usually so occupied with their day-to-day operational issues that they were unable to scan the horizon for available best practices or new market opportunities. Accessing private sector consulting support in the first instance, however, was seen as suspect because of concerns that such sources were often biased, nonspecific and costly. Once an objective assessment audit identified opportunities and sources of specialized expertise, firms were eager to access them. One criticism of the federally-supported program was that unlike the agricultural extension service, the manufacturing centres were

implemented across state lines and ignored the strong role of counties in economic development. If programs were to be fully utilized, they needed to be delivered through local agencies, where firms could have frequent interaction and develop the trust necessary to utilize supports and where supports could be tailored to the specific needs of firms in particular sub-sectors.

In Canada, the lead national department is Industry Canada, which has produced numerous studies and reports of best practices for small business and sectoral development, including manufacturing. Significant efforts have been made to develop information products for dissemination to industry associations, development agencies and individual firms. AStrategis@ was developed as an INTERNET-based source of business support, sectoral development and export information. Support is provided to the Alliance of Manufacturers and Exporters of Canada to work on behalf of manufacturers and exporters across the country. The Alliance has assigned staff to such areas as bench marking, human resources, industrial research (in cooperation with the National Research Council), intelligent manufacturing systems, and a technology visits program focussed on best practices.

The Promoting Business Excellence Program (PROBE), administered by the Alliance with the support of IBM and Industry Canada, provides diagnostic tools for manufacturers to determine their core competence and identify how to maintain it. The program is based on an approach developed by IBM and the London Business School over the past four years. Over 900 manufacturing sites have participated in the program worldwide, providing a database of global best practices. PROBE benchmarks performance and practices against other manufacturers and highlights areas for improvement. It employs a certified facilitator to work with staff from a participating firm in two one-day fact-finding sessions and provides results, analysis and a final feedback report. It includes consideration of total quality, concurrent engineering, lean production, innovation and product development, manufacturing and engineering systems, logistics, company organization and culture. To date, however, firms in Newfoundland and Labrador have not accessed PROBE, indicating that the type of sector-specific outreach supported in the United States may be needed at the regional or local level to foster awareness of the benefits of such bench marking and best practices adoption.

The National Research Council of the federal government does provide financial and advisory support for firms to create and adopt innovative technologies through the Industrial Research and Assistance Program (IRAP). IRAP draws on specialized scientific and technological expertise within the NRC across Canada, and employs outreach staff who partner with provincial business development agencies, regional colleges and other organizations to integrate technology development and commercialization with business development support. This model has been applauded as a means to match federal technical and financial resources with regional and local delivery. In Newfoundland and Labrador, the NRC has IRAP staff in five locations across the province, providing access to many of the technical supports for manufacturing firms with products and processes related to innovative technologies. IRAP provides non-repayable contributions to firms for the development of new technologies and can provide re-payable support to assist with bringing new technologies to market. The funding budgeted for the program is

insufficient to meet the demand, however, so pro-active marketing of the support is limited. While the program targets firms developing leading edge technologies, it also supports the adoption of new technologies and processes. With increased resources, IRAP could play a key role in assisting small scale manufacturers in adopting many of the technology-related best practices identified in this study.

Within Newfoundland and Labrador, the Federal-Provincial Agreement on Strategic Investment and Industrial Development (SIID) was established in 1992 with $ 43.5 million to support development of emerging industries (including support for industry associations), working with existing firms and investment attraction. SIID addressed many of the areas highlighted by this study: first-time technology adoption, diagnostic analysis and implementation (including quality assurance and control programs, management information systems and CAD/CAM technology), strategic alliance and consortia formation, product development and testing, industrial skills enhancement, and training and management development. When the SIID Agreement expired in 1998, federal cuts to funding for Federal-Provincial Agreements meant that the new Comprehensive Economic Development Agreement (CEDA) was limited to a $ 10 million Technology Development Program, which cannot provide direct support to business clients.

ACOA and the provincial Departments of Development and Rural Renewal and Industry, Trade and Technology do provide support to manufacturing operations in addition to federal-provincial agreements and the national strategies and supports of Industry Canada. ACOA=s business finance support can assist firms with the same business development activities covered in the SIID agreement, but on a re-payable basis. The Department of Development and Rural Renewal can also support such business development activities, including non-repayable contributions. Through its Economic Development Officers in each of the twenty economic zones, this Department also provides business counselling support in cooperation with the community-based CBDCs. It also cooperates with the NRC in delivering IRAP support in five centres across the province. The Department of Industry, Trade and Technology is the provincial government=s economic development arm for promoting business investment in the Province and the export of goods, technology and services to markets worldwide. This Department also has a mandate to maximize local industrial benefits from large scale natural resource-based initiatives. It also produces an annual Directory of Manufacturers and recently announced that a registry of manufactured goods in Newfoundland and Labrador would be produced to ensure that government purchasing specifications facilitate bids from manufacturers within the province.

Nova Scotia, New Brunswick and PEI deliver similar supports through ACOA and their Departments of Economic Development and Tourism. In North Bay, FEDNOR provides the same types of supports as ACOA. As well, North Bay has supported sector development using the Industrial Adjustment Service Program (IAS), which now comes under Federal-Provincial Labour Market Development Agreements. IAS provides for private sector and community-based participants to hire a consultant to chair a research and implementation process for community development.

The Ontario Government has significantly downsized its business support outreach under the Ministry of Economic Development, Trade and Tourism, but the Ministry

of Agriculture, Food and Rural Affairs launched a $ 30 million Rural Job Strategy Fund in 1997. This fund targets quality enhancement, information technology and marketing to enhance investment in rural communities and to promote increased exports from them. It follows many of the key lessons for manufacturing and economic development identified in this study: building new alliances and partnerships along the production, processing and marketing chain; developing and implementing quality standards and programs; improving access to and increasing the use of global information resources; increasing efficiency by using new and innovative technology and management practices; and developing community-based economic strategies. Funds are available on a cost-shared basis with the private sector. Applicants cannot be individual businesses but must involve alliances or partnerships to advance the development of the sector or a community. The Ministry has also launched a BRE program, based upon the American experience.

In addition to government funding programs and staff for manufacturing support, there are numerous approaches to research and development infrastructure for innovation in manufacturing in each of the jurisdictions. In the Atlantic Provinces alone there is a significant degree of variation. All four of the Atlantic provinces, to varying degrees, have developed agencies or organizations to address three key elements of encouraging technological innovation in manufacturing: technology transfer, research and development, and training. They differ on the emphasis placed on each of the elements, in the geographic scope of the delivery, and in the level of direct government participation.

Newfoundland and New Brunswick rely heavily on the transfer of technological innovation from universities and colleges to the manufacturing sector. In Newfoundland, however, the manufacturing technological support infrastructure is largely undeveloped. The Seabright Corporation has been established at Memorial University, with a mandate to facilitate the commercialization of university-generated Ainventions.@ The Genesis Centre, also at the University, is an incubator facility for Ahigh-tech@ start-up companies. The Genesis Centre attempts to link the resources of the University with the needs of its clients to achieve technical innovation. Perhaps the most direct University-based technical support for the manufacturing sector will result from the recent establishment of the Manufacturing Technology Centre. This is a collaborative effort between Memorial University and the College of the North Atlantic, in partnership with the Alliance of Manufacturers and Exporters of Newfoundland. While reasonably well outfitted with advanced manufacturing equipment, this Centre has limited human resources which limits its capacity to respond to requests and precludes a proactive approach. In addition, there have not been significant efforts to provide regional outreach, hence manufacturers outside of the St. John=s area are currently disadvantaged with respect to access to the Centre.

New Brunswick has established ten Manufacturing Technology Centers (MTCs) as partnerships between universities, colleges and the government through its Research and Productivity Council (RPC). The RPC keeps a provincial focus on assisting industry with high-end research and development and commercialization services. The MTCs are self-supporting technology transfer and training organizations. While each MTC has its own areas of specialization, all offer similar

services in the areas of business training, research and development, and technology transfer.

Nova Scotia has taken a generalist strategy in support of technological innovation through research and development. In*nova*corp and NovaKnowledge, based in Halifax, act as catalysts for the introduction and commercialization of industrial, engineering and information technology respectively. In*nova*corp provides a wide range of scientific and engineering research and development as well as commercialization services to the private sector. In*nova*corp also partners with other agencies to provide specific programs for technology adoption and innovation. One example is the Technical People in Industry Program, delivered in partnership with ACOA, which places technical employees on a project basis in businesses requiring technical assistance. Prince Edward Island=s Food Technology Center provides research and development and product development services to the agriculture and fisheries sectors. While these services are similar to those offered by In*nova*corp and the MTCs, they are limited in applicability outside of the target sectors.

All provinces use community colleges as key delivery agents of generic manufacturing, technological and business training and support. In Newfoundland, the 18 campuses of the College of the North Atlantic offer courses in various areas of technology that are developed to meet the needs of emerging sectors, such as offshore oil and gas. Nova Scotia=s 14 community colleges offer manufacturing technology courses and can also develop customized courses as requested by industries or firms. New Brunswick=s nine community colleges offer a similar custom-design service. Prince Edward Island=s network of campuses of Holland College works closely with local industry to design their overall curriculum.

In addition to all these supports to the business operations needs of manufacturers, greater awareness of the emerging trends in manufacturing is needed by business and support agency staff and the faculty and staff of educational institutions. Greater coordination of these agencies is also required to provide the targeted support that this research has revealed is essential to the development of the sector. The establishment of single window business service centres in the twenty economic zones to coordinate ACOA, CBDC and Development and Rural Renewal supports should advance this effort significantly in Newfoundland and Labrador.

Business Networks. Several of the programs and supports described in this report relate to the promotion of sectoral clusters and the formation of business networks. For example, Ireland has linked its strategic approach to the identification of key sectors and, on a regional basis within the jurisdiction, has integrated supports to create the infrastructure and specialized workforce needed by the sector. This enhances opportunities for inter-firm supply relationships which benefit from close proximity. Not only does this benefit firms in terms of transportation and human resource issues, but it also creates opportunities for product innovations through user-producer interaction. When related firms are situated in a region, synergies occur as ideas are shared and products and processes adapted in response to changing needs along the supply chain. ALearning-by-doing@ on the shop floor is the source of most innovation, rather than technology transfer from science parks. Geographic clustering facilitates this.

Industry Canada, in partnership with the Canadian Chamber of Commerce, supported the formation of business networks which did not require geographic clustering but rather facilitated the formation of consortia or other alliances between two or more firms. The key support provided was the provision of a trained network broker, who could determine the need for a business network and could also broker the personal relationships between business operators who had to learn to depend upon one another. The North Bay area was particularly active in accessing this program, with 17 business networks formed with the support of the national program, all clustered geographically in the North Bay region as a result of the coordinated approach taken at the local level. In Newfoundland, a separate business networks program was created under a federal-provincial fund instituted in response to the fisheries crisis. It adopted the same approach as the national program. To date, eight business networks have been supported, four of which are related to manufacturing.

The findings of this research indicate that while business network programs are beneficial, it is essential that all industry, community and government stakeholders learn the benefits and techniques for successful partnering. Supply chain management, business network formation and marketing in long-term relationships require an ability to build trust and partner effectively. Small jurisdictions have the mixed blessing of fewer people to get to know, especially in a single sector, sub-region or community. This allows easier networking but it also means that old relationships bring baggage that can undermine trust. By understanding the best practices necessary for successful development, manufacturers can systematically tackle these emerging ways of doing business.

4.0 Conclusion

For small scale manufacturers, and for jurisdictions targeting the development of the sector, this research indicates a common requirement - the need to focus. Globalization is more than a buzz word supporting trade liberalization efforts; it has become a fact of life in business and economic development. Manufacturers now face competition from firms world-wide and jurisdictions are vying to determine how they can position themselves to support and attract development in this environment. These trends are creating opportunities as well as threats for islands and regions with small economies, relatively dispersed populations and which are distant from markets. The previous dynamic of centralization and concentration of secondary manufacturing in the industrial core of developed countries impeded diversification in these regions, but these characteristics no longer prevail for many manufacturing activities. For firms and regions able to focus on what they do best and harness and build on emerging socio-economic, technological and market trends, opportunities abound.

For small scale manufacturers, the new environment of production can be a very different terrain from that to which they have grown accustomed. Manufacturing quality products at competitive cost is no longer a guarantee of long-term viability. Quality and cost are still prerequisites for success, but now the firm must understand how its production relates to customers who can source most products from outside the region or the country. Whether they are end users or other firms purchasing inputs for further value added, customers demand responsiveness to

changing demands, reliability of quality, combined with flexibility in production, and delivery timed to meet demand. To achieve success in this environment, small scale manufacturers must know what their competitive advantage is, how to improve and maintain it and how to market and deliver it when and where it is needed. Firms must understand and apply the lessons and practices of core competence and how that relates to out-sourcing, supply chain management, integrating sales and marketing with production, flexible manufacturing and business networks. Governments, industry organizations and communities targeting the sector must adapt and apply rigorous business supports to address these lessons and practices, along with the techniques and tools which assist in their implementation.

For jurisdictions to facilitate the development of the sector in a region or country, implementing supports which address the emerging needs of individual manufacturing firms is key but insufficient. Just as with individual firms, jurisdictions must decide what they are best at - or what they intend to be best at - and focus their efforts to achieve it. Many high-end services - research and development, finance, venture capital - remain in metropolitan centres (although new centres have emerged around new industries), but production can locate where the level of expertise, cost and quality, can be matched to the component or product required.

Newfoundland and Labrador and other Aperipheral@ jurisdictions have the potential to determine their relative strengths and harness available resources to focus infrastructure, training and investment on those sectors or sub-sectors, which are - or can be - their core competence. Just as with individual firms, they must maintain the ability to apply jurisdictional core competence flexibly to meet varying and changing opportunities. Scanning of markets, technology and other jurisdictions (competitors and collaborators) must be ongoing. To achieve results, though, governments must commit to the development of the sector through a coordinated and sustained approach, strategically target the opportunities which build on local strengths, and enter partnerships for implementation and support champions to lead it.

For firms and jurisdictions alike, globalization presents forces and conditions which must be understood and acted upon. Determining and achieving core competence must be rooted in an understanding of these forces, but it does not guarantee success as markets, technologies and geo-political relationships evolve. In the end, workers, entrepreneurs, community and industry leaders and governments must learn to adapt to changing conditions while maintaining and exploiting their unique strengths and opportunities. The following strategies for action present a means for businesses, educators, community organizations and governments to meet this challenge and advance the development of manufacturing in Newfoundland and Labrador.

5.0 Strategies for Action

1. Small scale manufacturing will be adopted as a development priority by the P

The provincial government affirms its support to small scale manufacturing as an econc

long-term coordinated and sustained approach to sector development, with encourager partner accordingly.

2. Information and education concerning best practices in manufacturing develo

Manufacturers, industry associations, educators, community development organization: government agencies will be informed of the key trends and best practices for manufac attainment, bench marking, total quality management, out-sourcing, supply chain mana data interchange, just-in-time manufacturing, integrating marketing and sales with prod networks.

The following actions will be taken to support this strategic direction:

2.1 The Alliance of Manufacturers and Exporters of Newfoundland (Alliance) cooperation with the Department of Development and Rural Renewal (D Opportunities Agency (ACOA), regional workshops to present the key tr success.

2.2 The Alliance will be encouraged to communicate the key trends and bes their members through their newsletter, their annual conference and thro encouraged to recognize publicly and promote manufacturers in small, n manufacturing best practices, as well as industry, educational and comm manufacturing sector development.

2.3 The provincial government will inform all staff involved in business and r trends, best practices for manufacturing success, and programs which c and will encourage the federal government to adopt a similar effort.

2.4 Industry associations, Chambers of Commerce and community economi encouraged to communicate the key trends and best practices for manu in their respective sectors, communities and regions.

2.5 Memorial University of Newfoundland (MUN) and the College of the Nor support professional development for faculty and staff to enhance awareness of cooperation with them, in education and training, research and outreach

3. Manufacturers in Newfoundland and Labrador will be assisted to attain core c manufacturing best practices to improve sales, exports and profitability

3.1 In consultation with the Alliance and the federal government, the provinc programs and supports to adapt their suitability to support the implemen pro-actively market these to manufacturers in the province.

3.2 In consultation with the Alliance and the federal government, the provinc means to address any gaps in the availability of existing tools, programs

implementation of manufacturing best practices, and take steps to fill the

3.3 The provincial government will provide support for manufacturers to impl consistent with manufacturing best practices and export development, w government to partner accordingly.

3.4 In consultation with the Alliance and the federal government, the provinc on supports for managing transportation logistics to meet the demands c sales is provided to manufacturers.

3.5 The provincial government will work with the Alliance, the federal govern modules in manufacturing best practices for delivery to private business development support staff and community development support staff. Cc certification by the respective institutions.

3.6 To ensure that graduates have the skills necessary for the workplace an skills, the provincial government will encourage MUN and CNA, in partne

3.6 a) review existing business, engineering and other curricula t practices appropriate for the development of the sector are

3.6 b) develop mechanisms to link business, engineering and oth understanding of the links between best practices in mana

3.6 c) develop mechanisms to ensure there is an effective and ap the workplace for new graduates.

3.7 To ensure that manufacturers have access to available resources for res support within the Province's educational facilities, the provincial governr partnership with other stakeholders, to:

3.7 a) develop a long-term manufacturing research and developn available resources in meeting needs throughout the Provi

3.7 b) work with the federal and provincial governments and the A by business, engineering and other staff and students to a practices;

3.7 c) proactively promote access to facilities which can assist m particularly as related to the attainment of core competenc Industry and community support organizations will be enco to identify specific companies who would benefit from their proactively market them. Wherever feasible, Government, development resources will be allocated toward these activ expertise and commitment to support the sector.

3.8 Regional Economic Development Boards (REDBs) and other community be encouraged to help identify companies who are interested in adoptinç encouraged to facilitate access to available support for these companies education and training institutions.

4. A strategic approach will be adopted to identifying, supporting and marketing opportunities for manufacturing sub-sectors

4.1 Provincial government front-line personnel will include core competency plan preparation, business analysis, counselling, and as part of the asse funding decisions. Core competency or the ability to move toward core c demonstrated in business plans. The federal government will be encoura

4.2 Provincial government frontline personnel will advocate partnering amon competencies, and the federal government will be encouraged to take th governments will utilize the Newfoundland Business Networks Program i become accredited Business Network Advisors.

4.3 REDBs and other community economic development organizations will b provincial staff to ensure government has the appropriate information an their regions. This will aid both in investment attraction and the developn competent firms from different regions of the province.

4.4 The provincial government will commit to the research and implementati strategies for specific manufacturing sub-sectors or industries, building o term coordinated interventions for the allocation of infrastructure, training and investment prospecting resources, and will encourage the Federal G

4.5 The Provincial Government's manufacturing development approach will t specialized business and technical skills available to manufacturers in ru availability of and mechanisms used to satisfy skill requirements. Where cooperation with the Alliance, the Federal Government and REDBs to en skills in all regions.

4.6 The Provincial Government will develop a manufacturing opportunity pro consisting of the following steps:

i. Provincial government agencies will partner with federal ag attraction efforts with clear designation of roles and respon

ii. Building on zonal strategic economic plans, sub-sectors wi human resource skills, transportation infrastructure, locatio characteristics, as well as taking province-wide strengths a

iii. External firms which would benefit from the Province's stre targeted. These firms will be presented with the business c Newfoundland and Labrador location.

iv. These firms will be approached by an attraction team repre economic development organizations, and government sta negotiate and offer the full suite of supports available.

v. Applications from targeted companies will be dealt with ex

vi. To aid lead (prospecting) identification, the Provincial Gove and the federal government, will engage the private sector

activities in an appropriate manner.

vii. Attraction efforts will be directed to both companies and ex Labradorians. This will entail identifying expatriates in seni manufacturing companies and specifically garnering their s efforts directed toward individual expatriate entrepreneurs.

viii. To provide an indication to the targeted firm of the Provinc will take a visible role as spokespersons for the investment the team.

5. Partnerships for the implementation of manufacturing development activities v

5.1 The Provincial Government will designate the Department of Developme AMEN and the Federal Government, a Newfoundland and Labrador Mar maintain regular communications on progress in implementing this strate manufacturing in the province. The Forum will comprise manufacturing d Memorial University, College of the North Atlantic, the Federal and Provi development organizations, and have industry representation from acros

5.2 The provincial government will support Regional Economic Development partnerships within and between economic zones to implement manufac with zonal strategic economic plans.

5.3 The provincial government will use the Canada/Newfoundand Labour Ma partnerships at the community, regional and provincial levels to advance practices within specific manufacturing sub-sectors.

5.4 The Newfoundland and Labrador Federation of Municipalities will be enc community economic development organizations and governments, opp development of manufacturing in their communities and zones.

5.5 The Newfoundland and Labrador Federation of Labour will be encourage and government, opportunities for unions to support the development of workers' interests are protected.

Appendix I - Small Scale Manufacturing Study Advisory Group Participants

Name	Organization
Paul Alexander	Department of Industry, Trade and Technology
Stephen Carse	Isle of Man Government
Andy Fisher	Memorial University of Newfoundland

Karen Daley	Atlantic Canada Opportunities Agency
Bill Grandy	Department of Development and Rural Renewal
Rob Greenwood	Department of Development and Rural Renewal
Don Hogan	Atlantic Canada Opportunities Agency
Lorne Janes	Alliance of Manufacturers and Exporters Newfoundland
Sean McCarthy	Department of Development and Rural Renewal
Roger Parsons	Systems Design Inc., Springdale, NF
Burf Ploughman	Alliance of Manufacturers and Exporters Newfoundland
Bill Stirling	Bishop=s Falls Development Corporation
Keith Warren	Industry Canada

Appendix II - Development Support Study Jurisdictional Liaisons

Name	**Organization**
Harry Baglole	The Institute of Island Studies, U.P.E.I. - P.E.I.
Kristjan Olafsson	IceTec - Iceland
Emil Karlsson	IceTec - Iceland
Sean McCarthy	Department of Development and Rural Renewal -NF & LAB
Neil Wilson	Department of Industry, The Treasury- Isle of Man
Martin Caley	Department of Industry, The Treasury- Isle of Man
Chris Bryant	Nova Scotia Economic Renewal Agency - Nova Scotia
Michel Gauvin	Department of Agriculture and Rural Development - New Brunswick
Carmen	

DeMarco	Industry Canada - North Bay Region, Ontario
David Freshwater	Tennessee Valley Authority Rural Studies - Kentucky
Bill Walsh	Forbairt - Galway Region, Ireland

Appendix III - GUIDELINES FOR ENTERPRISE INTERVIEWS

Objectives

To Obtain Information on Success and Failure Factors of Twenty SSM=s in Order to Take Advantage of Their Experience and Develop A Tool for Helping Policy Makers, Stakeholders, and Industry Players Stimulate and Start Innovative SSM>s.

To Take Into Account Variables with Respect to Competitiveness in the Context of Globalization.

Closed Ended Questions

1. Enterprise name

2. Name and responsibility of the informant

3. Location of facilities

4. Year of creation

5. Ownership structure

6. Field of activities

7. Main product and secondary products

8. Employees

   - Total number
   - Turnover rate
   - Number in production
   - Average wage of production workers

10. Production & capacity

11. Business growth rate (either a dollar value or percent increase/decrease)

- Five years ago
- Current year
- Expected in five years from now

12. Location of markets (as a percent of sales)

	5 years ago	Now	5 Years From Now
• Local	_____	_____	_____
• Provincial	_____	_____	_____
• National	_____	_____	_____
• International	_____	_____	_____

13. How has your information and processing technology changed over the last five years? Are any major new changes anticipated?

14. Are you involved in networking with other companies in terms of marketing, purchasing inputs, transportation, etc. ? if so,

- With what type of organizations/firms?
- Are these local enterprises/organizations?
- What are the main benefits and drawbacks to this activity?

15. Type/source of inputs

ix. 1 Do you purchase materials for input to producing your products? If so, what types of materials are purchased, what percentage comes from suppliers outside the province, and what is the main reason for not purchasing locally?

x. 1 Do you purchase products for resale? If so, what types of products are purchased, w province, and what is the main reason for not purchasing locally?

xi. 1 Do you purchase services for your company? If so, what types of services are purchased, what percentage comes from suppliers outside the province, and what is the main reason for not purchasing locally?

Open Ended Questions

16. Why did you select this location?

a. Region of long term residence {}
b. Attracted for non-manufacturing related reasons (culture, scenery) {}
c. Offered specific assistance to establish in this region {}
d. Good strategic location for my operation because: {}
e. No specific reason {}
f. Others:

17. What were the main challenges at the beginning?

a. Entering the local market {}
b. Securing financial support {}
c. Locating necessary human resources {}
d. Locating proper facilities {}
e. Exporting {}
f. Others:

18. What are the main problems or difficulties now?

a. Lack of capital for infrastructure {}
b. Lack of working capital {}
c. Lack of support from local stakeholders {}
d. Lack of information on external markets {}
e. Lack of research & development {}
f. Inadequate human resources {}
g. Poor productivity {}
h. Poor quality {}
i. Increasing competition {}
j. Others:

19. Gives some examples of past failures and their relevant causes.

20. Identify the firm's current success factors.

a. Innovative aspect of the product { }
b. Quality standards { }
c. Low cost of production { }
d. High quality human resources { }
e. Good information networks { }
f. Government assistance programs { }
g. Local stakeholder support { }
h. Strategic alliances { }
i. Marketing capability { }
j. Skills of owner/manager { }
k. Research & development { }
l. Others:

21. Describe the role and behaviour of the enterprise owner?

- On a scale of one to five, one being reactive, to what extent does the owner appear to be either reactive or proactive with respect to decision related to:

	Reactive		
Developing/marketing new products	1	2	3
New technologies	1	2	3
Human resource training	1	2	3
Targeting new markets	1	2	3

22. Describe the SSM's aptitude for obtaining and using information on technology and marketing initiatives

23. Does the SSM participate in national and international fairs or exhibitions?

Seldom 1 2 3 4 5 Always

24. Was the SSM involved in specific networks? If so, what was outcome of this involvement?

25. On a scale of one to five, one being not effective, how effective are the following types of information sources:

	Not effective			
Governmental agencies	1	2	3	4
Professional organizations	1	2	3	4
Periodicals	1	2	3	4
Clients	1	2	3	4
Business associations	1	2	3	4
Other enterprises.	1	2	3	4
Others:				
_____	1	2	3	4
_____	1	2	3	4

26. Quality of enterprise management as it relates to human resources:

a. What types of human resource problems does the SSM experience?

b. What types of training assistance are available to the SSM and which have been availed?

c. What has the SSM's experience been regarding efforts to improve human resource productivity?

d. Are future human resource initiatives planned?

27. Identify recent initiatives with respect to the purchase of or improvements to technologies, buildings and any other type of physical facilities.

28. On a scale of one to five, where one is slow, to what extent has the enterprise been able to react quickly to changes in the marketplace in terms of:

	Slow			Fast

Products	1	2	3	4	5
Technologies available	1	2	3	4	5
Human resources requirements	1	2	3	4	5
Capital availability	1	2	3	4	5

29. Competition

I. Is competition an issue? If so, who are your main sources of competition and
1 what is competition based on (i.e. quality, price, delivery, etc)?

ii. Identify strategies used to cope with competitive forces.

a. Product innovations through R & D {}
b. Human resource training {}
c. Investments in new equipment {}
d. New marketing initiatives {}
e. Strategic alliances {}
f. Others

30. Identify source's of capital used by the SSM, problems related to financing, and the role local risk capital played in the SSM's success.

On a Scale of 1 to 5, with 1 being not important, rate the role external risk capital has in your operation.

Low 1 2 3 4 5 High

31. Opinion of governmental assistance

i. Identify the SSM's opinion regarding the relevancy of existing programs and the assistance gaps which should be addressed.

ii. Identify the SSM's opinion of the role of local regional governments, development agencies, etc.

iii. Is there a need for these sources of assistance?

32. Additional comments

IV - BIBLIOGRAPHY

Alliance of Manufacturers & Exporters Canada. 1998. 1998-2000 Management Issues Survey: Bridging the Gap to the New Millennium.

Barry Sheppard Consulting. 1997. Global Trends in Manufacturing. St. John's: Prepared for the Department of Development and Rural Renewal, Government of Newfoundland and Labrador with funding from the Canada-Newfoundland Agreement on Economic Renewal, September.

Bryer, T. 1997. AUsing Total Assessment Audits to Help Iowa's Manufacturers Compete.@ Economic Development Review, Vol. 15, No. 1 (Spring), 27-29.

Byrne, L. 1998. ALessons of the Irish Miracle.@ Report on Business Magazine (June), pp.88-92.

Canadian Manufacturers' Association. 1995. Manufacturing our Future.

Clarke, Kim. 1997. A Manufacturing's Hidden Asset: Temp Workers,@ Fortune (November), 28-29.

Cobb, R. H. 1997. AFlexible Business Networks.@ Economic Development Review, Vol. 15, No. 1 (Spring), 30-32.

Deloitte & Touche and Deloitte Consulting. 1998. 1998 Vision in Manufacturing: A Global Manufacturing Survey.

Department of the Environment. 1996. Better Local Government: A Programme for Change, Government of Ireland, December.

Economist. 1998. AMeet the Global Factory: A Survey of Manufacturing.@ The Economist, June 20, 1-18.

Feller, I. 1993. AWhat Agricultural Extension Has to Offer as a Model for Manufacturing Modernization.@ Journal of Policy Analysis and Management, Vol. 12, No. 3, 574-81.

Forfas. 1997. Shaping our Future: A Strategy for Enterprise in Ireland,Government of Ireland.

Government of Newfoundland and Labrador. 1992. Change and Challenge: A Strategic Economic Plan for Newfoundland and Labrador. St. John's: Queen's Printer, June.

Greenwood, Robert.1997. APerformance Contracts and Regional Development: New Approaches to Government - Community Relations in Newfoundland and Labrador,@ in Richard Rounds (ed.), Changing Rural Institutions. Brandon: Canadian Rural Restructuring Foundation / Rural Development Institute, pp. 127-36.

_____, and Roger Parsons. 1995. AHome-Based / Micro Businesses and Regional Production Systems: A Strategy for Economic Development Competitiveness in Newfoundland and Labrador,@ in Dermot O'Doherty (ed.) Globalisation, Networking and Small Firm Innovation. London: Graham & Trotman.

Glasmeier, A. K., et al. 1998. AThe Relevance of Firm-learning Theories to the Design and Evaluation of Manufacturing Modernization Programs.@ Economic Development Quarterly, Vol. 12, No. 2 (May), 107-24.

Harris, R.I.D. 1987. AThe Role of Manufacturing in Regional Growth@, Regional Studies, Vol. 21, No. 4, 301-12.

Hines, B. and Clark, S. 1997. AThe Competitive Advantage Model: The Case of Business Retention and Expansion in Bowling Green, Ohio.@ Economic Development Review (Spring), 18-22.

Kentucky Appalachian Task Force. 1995. Communities of Hope: Preparing for the Future in Appalachian Kentucky, January.

KPMG & Prospectus Inc. 1997. The Atlantic Canada Advantage: A Comparison of Business Costs in Atlantic Canada, Europe & the United States.

Kumar, Nirmalya. 1996. AThe Power of Trust in Manufacturer-Retailer Relations,@ Harvard Business Review, (Nov.-Dec.), 92-106.

Mair, A. 1992. ANew Growth Poles? Just-in-time Manufacturing and Local Economic Development Strategy.@ Regional Studies, Vol. 27, No.

3, 207-21.

Meegan, Richard. 1988. 'A Crisis of Mass Production'. The Economy in Question. Eds. John Allen and Doreen Massey. London: Sage.

Morse, G.N. and I. Ha. 1997. AHow Successful are Business Retention and Expansion

Implementation Efforts.@ Economic Development Review, Vol. 15, No. 1 (Spring), 8-13.

Newfoundland and Labrador. 1995. Change and Challenge: A Strategic Economic Plan for Newfoundland and Labrador. St. John's: Queen's
Printer.

Piore, Michael J., and Charles F. Sabel. 1984. The Second Industrial Divide: Possibilities for Prosperity. New York: Basic Books.

Porter, Michael E. 1990. The Competitive Advantage of Nations. London: Macmillan.

_____, 1991. 'Canada at the Crossroads: The Reality of a New Competitive Environment', A study prepared for the Business Council on
National Issues and the Government of Canada.

Report of the Task Force on Community Economic Development. 1995. Community Matters: The New Regional Economic Development. St.
John's, Newfoundland.

Terluin, I.J. and Post, J.H. 1998. ALeading and Lagging Areas in the EU: Some Key Findings.@

Paper presented to the Canadian Rural Restructuring foundation Annual Meeting and conference, October 14-17, Nelson, B.C.

Thrift, N. 1987. AManufacturing Rural Geography?@, Journal of Rural Studies, Vol. 3, No. 1, 77- 81.

Walker, R. 1988. 'The Geographical Organization of Production-Systems'. Environment and

Planning D: Society and Space, 6, 377-408.

Watkins, Mel. 1989. 'The Political Economy of Growth'. The New Canadian Political Economy. Eds. Wallace Clement and Glen Williams.
Kingston, Ontario: McGill-Queen's University Press.

Weatherston, D. 1998. ANext Genration Manufacturing.@ Alliance (Sept./Oct.), 37-44.

Wojan, T.R. 1998. A Fragile Virtue:' Rural Labor Market Response to a New Competitive Environment.@ TVA Rural Studies and Department of
Agricultural Economics, University of Kentucky, mimeo.